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FOR

SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA, VIRGINIA



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5-548220

UNITED STATES MARINE CORPS
Marine Corps Schools
Quantico, Virginia

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15 MAY 10 1963

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From: Coordinator, Marine Corps Landing Force Development Activities
Marine Corps Schools, Quantico, Virginia
To: Commandant of the Marine Corps

Subj: Project 44-61-15 Field Power Distribution and Lighting System
for AOP's final report

- Ref: (a) CMC Project Directive 44-61-15 AO4F-ws of 4 Oct 61 to CMCLFDA
(b) CO, ASDBN, 2nd FSR, FMF ltr REN:jna over 10000 of 12 Jul 61 to CMC
(c) Marks Mechanical Engineers Handbook, 5th Edition, McGraw-Hill 1951
(d) CMC Interim Purchase Description for Frame, Tent, Maintenance, Medium, Light Metal, T58-10, 20 Feet by 64 Feet, Complete MIL-F-40132 dtd 28 Nov 62

- Encl: (1) Power Distribution Panel Drawing and List of Materials
(2) "M" Bay Extension Drawings and List of Materials
(3) Wiring Harness Installation Diagram and List of Materials

1. BACKGROUND

a. Reference (a) directed that the power distribution system, as proposed by reference (b), be evaluated to determine its suitability for use by the Atomic Ordnance Platoons (AOP's) and compatibility with the field shelters being evaluated under Project No. 42-61-01B.

was evaluated and
b. Reference (a) also directed that the lighting requirements were determined for the shelters to be determined, used by the Atomic Ordnance Platoons.

c. For this evaluation, it was assumed that the medium frame type portable shelter (40 feet by 20 feet by 14 feet arched) would be the basic facility out of which the AOP would work.

2. DISCUSSION

a. The proposed power distribution system is considered to be compatible with the medium shelter. However, certain minor modifications have been made to correct a potential safety hazard and

⑦ NA
⑧ U
⑩ NA
⑪ 4p
⑬ NA
⑭ NA
⑮ NA
⑯ NA
⑰ NA
⑱ NA
⑲ NA
⑳ NA

Is.C.

1-10
4-10

simplify wiring installation. The modified distribution system is functionally the same as the proposed system and conforms to the National Electric Code in wiring and component selection.

b. The nature of the work to be accomplished in the shelters can be classified as medium-fine assembly work for the purpose of determining the illumination requirement. This work would be conducted between two feet and five feet off the deck. Reference (c) established the illumination requirement for medium-fine assembly work as 35 foot-candles. A work reference plane was assumed to be three feet off the deck. Therefore, a lighting system capable of providing 35 foot-candles uniformly over a reference plane three feet off the deck was required.

c. Various bulbs, reflectors, and location combinations were tested in a medium shelter. The lighting system which best met the illumination requirement was a wiring harness assembly as outlined and illustrated in enclosure (3). This harness is basically the same as used by the U. S. Army in a similar type shelter, figure 5, reference (d).

d. The following changes have been made to the Army wiring harness:

(1) The lighting and outlet assembly has been broken into two parts, a light assembly eight feet long and an individual outlet assembly. This has been done to provide a more flexible system to meet the varied applications of the Marine Corps medium shelter such as AOP, Navy Field Medical, Maintenance, etc., all of which will be in multiples of eight feet in length. The individual outlet assembly will insure that an outlet or bank of outlets can be installed where required.

(2) A bulb reflector has been added to the list of material to provide for more efficient use of the illumination.

e. The capability of hanging this harness from any of the pur-lins in the arch with the provided hooks or various lengths of string make it an extremely flexible system. With the above options, plus a reflector and a selection of bulb sizes, the proposed wiring harness should be capable of meeting any illumination problem in the medium shelter.

3. CONCLUSIONS

It was concluded that
~~as (1) The power distribution system as outlined in enclosures (1) and (2) is suitable for Marine Corps use by AOP's;~~

9(2) Each AOP requires two complete power distribution systems;

8(3) ~~The wiring harness as outlined in enclosure (3) is suitable for use by AOP's in the medium shelter;~~ *and*

9(4) The wiring harness is considered flexible enough to meet the basic illumination requirements of the medium shelter for general use.

4. RECOMMENDATIONS

a. The power distribution system as outlined in enclosures (1) and (2) be procured on a two per AOP basis.

b. The wiring harness as outlined in enclosure (3) be issued on a one per medium shelter basis if the medium shelter is adopted as a Marine Corps item.

c. This project be terminated.

L. W. WALT
DEPUTY COORDINATOR

Copy to:

CMC (AX)

CMC (CSY)

CMC (AO4F)

CMC (AO4K)

CG, MCSA, (Code 830), Phila, Pa. (2)

CG, LFTULant

CG, LFTUPac

ASTIA (10)

COMPHIBTRALANT (Chairman, AWEB)

CG, T&E Cmd, APG, Md.

CG, U.S. Army Materiel Cmd, Bldg T-7,
Washington 25, D. C.

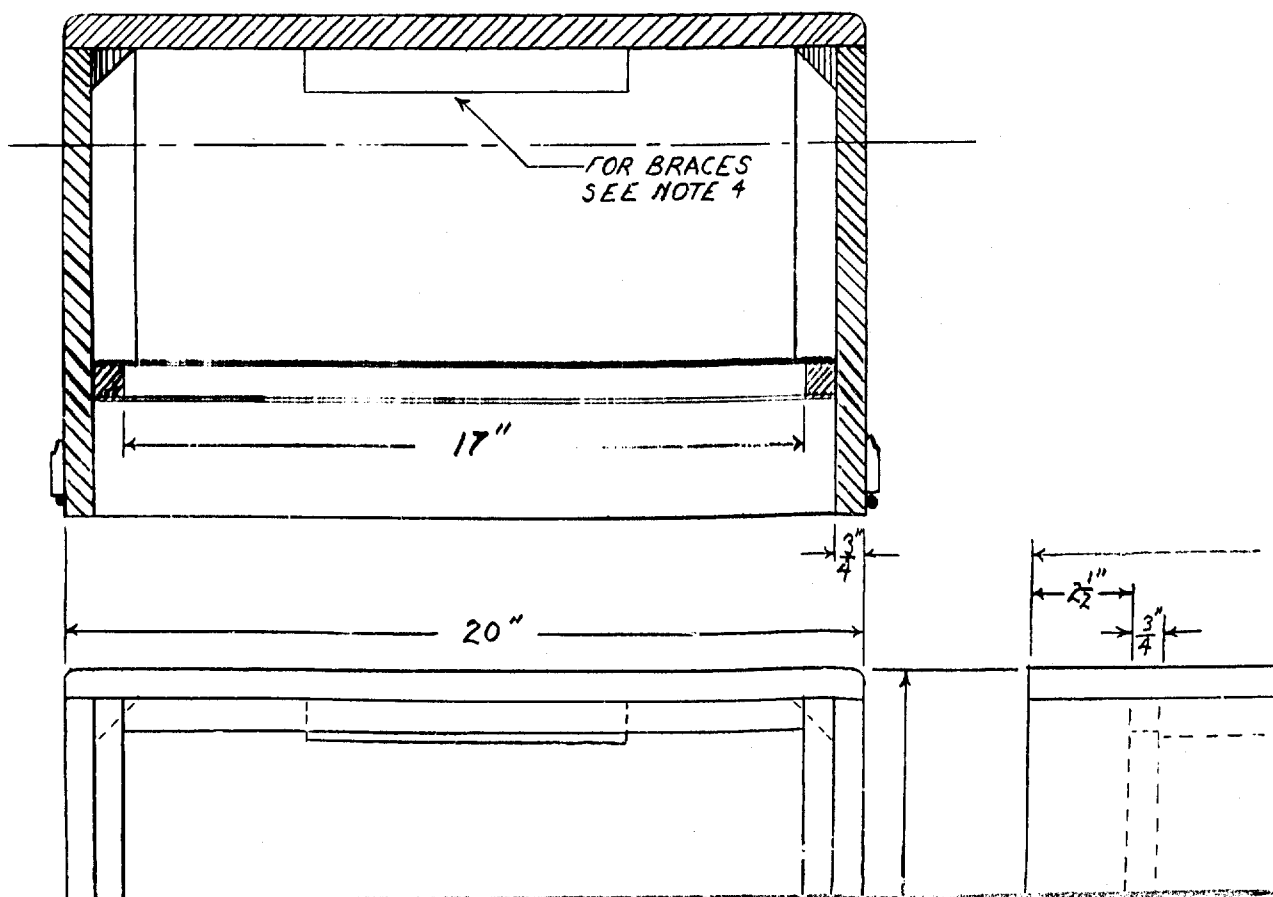
CO, MCES, MCB, CLNC

(Continued on page 4)

46/3D/WMJ:vfw
44-61-15

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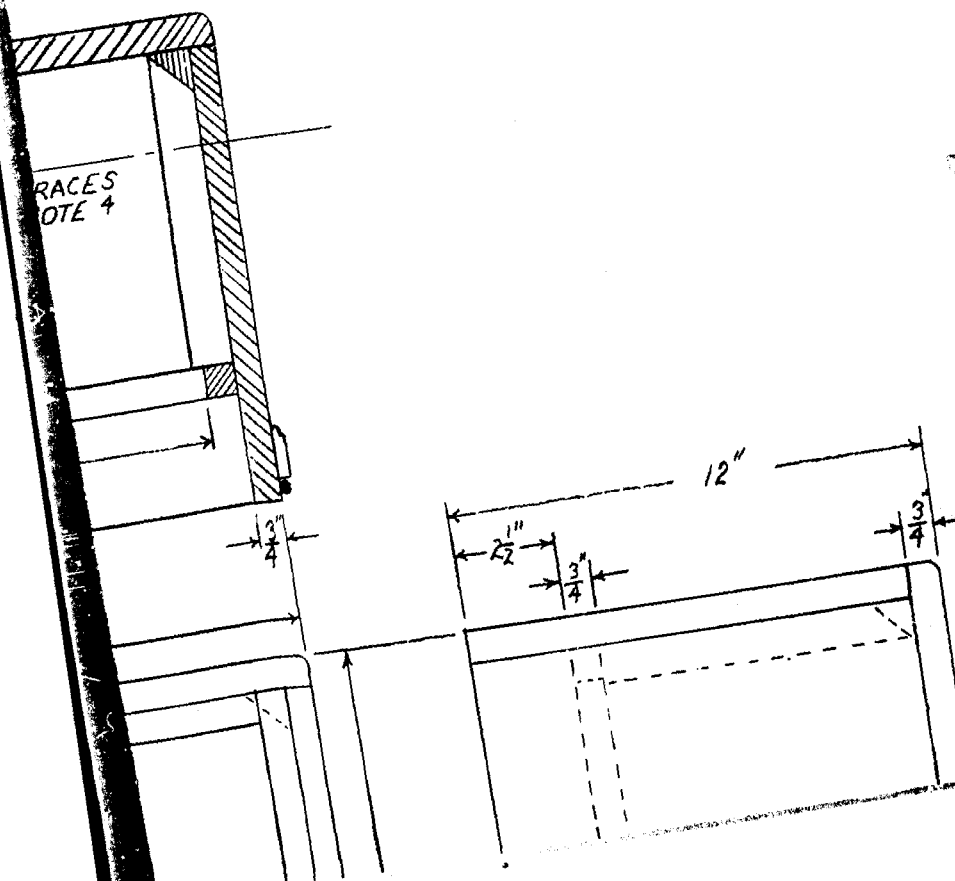
CG, Hq, USA CDC, Fort Belvoir, Va.
CG, FMFLant
CG, FMFPac
CG, 1st MarDiv
CG, 2d MarDiv
CG, 3d MarDiv
CG, ForTrs, FMFLant
CG, ForTrs, FMFPac
CG, 1st MarBrig
Chief of Ordnance (Attn: ORDTW-AR) DA
CG, QMR&E Cmd, (Attn: Publ O), Natick, Mass.
MCLnO, Hq, USA CDC, Fort Belvoir, Va.
MCLnO, USAArtBd, Fort Sill, Okla.
MCLnO, Army QMR&E Cmd, Natick, Mass.
MCLnO, Naval Field Medical Research Lab., CLNC
COMPHIBLANT LnO, MCLFDA (2)

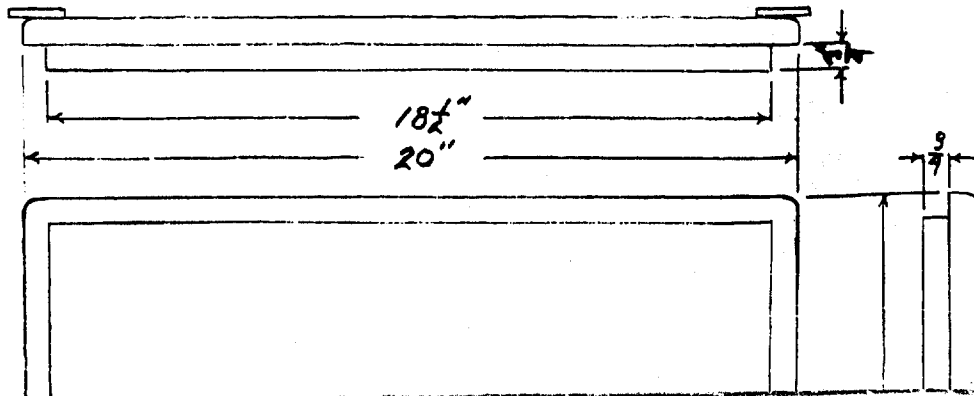


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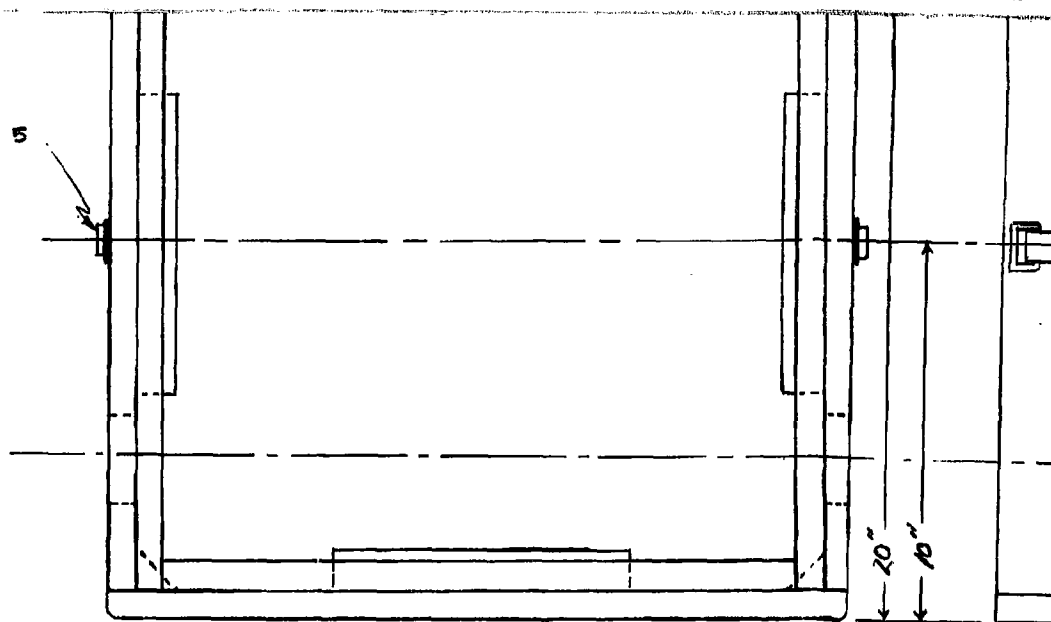
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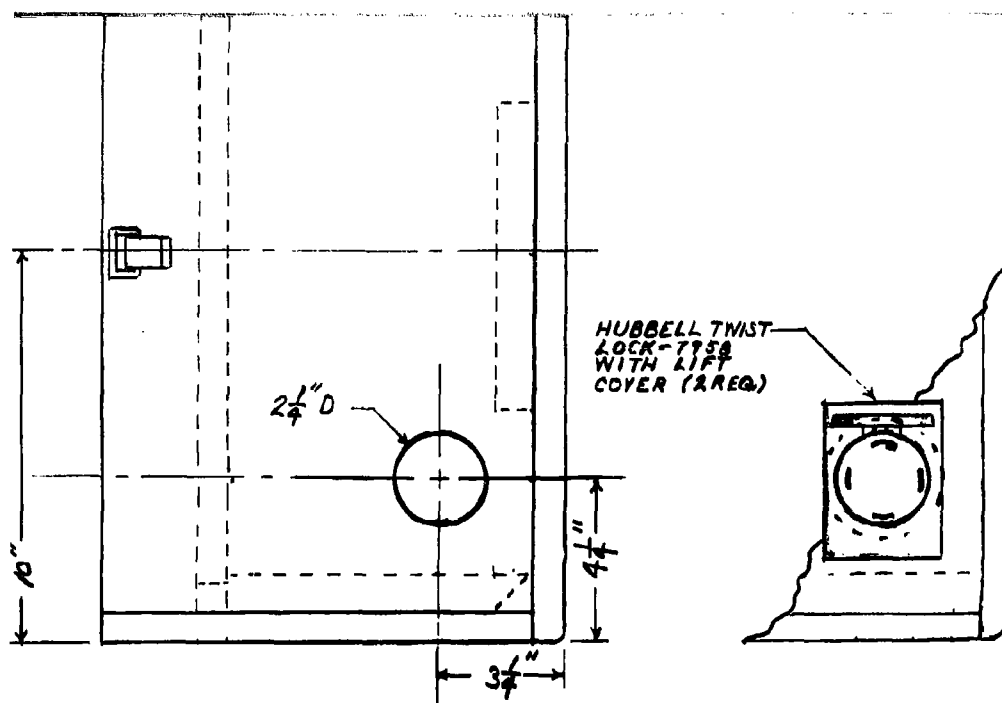


SEE NOTE 5

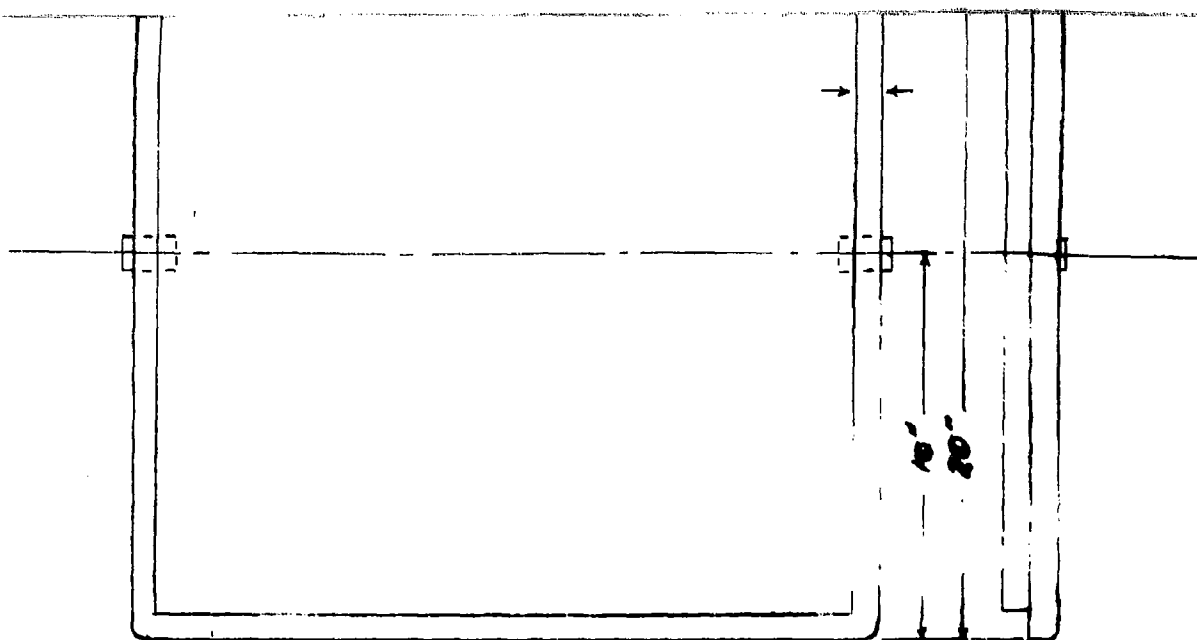


4

- | |
|---|
| 5. SUITABLE CLASP/CLAMPS TO SECURE COVER TO BOX |
| 1"x1" CLEAR PINE, CUT ON DIAGONAL. GLUED & NAILED |
| 4. SUGGESTED BRACES MADE FROM 8" LENGTH |
| SIZE HOLDING CLAMPS. |
| 3. SECURE TOP COVER WITH ADEQUATE |
| GREEN 23 LUSTERLESS ENAMEL 8010-526-1612 |
| 2. FINISH ALL WOOD SURFACES WITH U.S.M.C. |
| SIZE FINISHING NAILS AND WATERPROOF GLUE. |
| NOTES 1. CONSTRUCTION WILL BE WITH ADEQUATE |



5



COVER

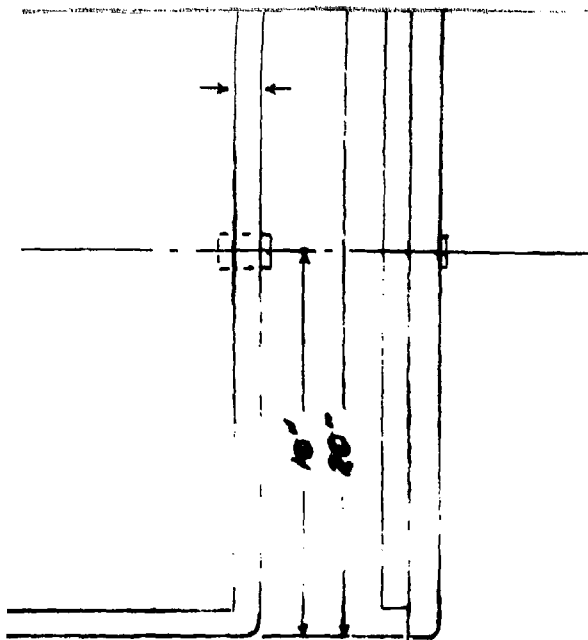
6

1	2		HUBBELL #7961 RECP.		
3	2		HUBBELL #7961 RECP.		
2	14' L.		18Y1' NC. PINE #1	WOOD	K
1	2054P		3/4" MARINE PLYWOOD 4'x8'	WOOD	W
ITEM	REQD	DWG NUMBER	DESCRIPTION	MATL.	

LIST OF MATERIALS

APPROVED FOR USMC PRE-RELEASED COPY DATE TOLERANCE FRAC $\frac{1}{64}$ DEC .004		E-BAY DISTRIBUTION BOX (AOP POWER DISTRIBUTION SYSTEM)	DE U DWG NO
SCALE 3" = 1'			

ENCLOSURE



ITEM	REQD	DWG NUMBER	DESCRIPTION	MATL.	AMT. SARG.
1	2		HUBBELL #7962 PLATE		
3	2		HUBBELL #7961 RECP.		
2	14 UN.		1 3/4" NC. PINE "1	WOOD	KNOT FREE
1	20 S4S		3/4" MARINE PLYWOOD 4' X 8'	WOOD	WATER PROOF

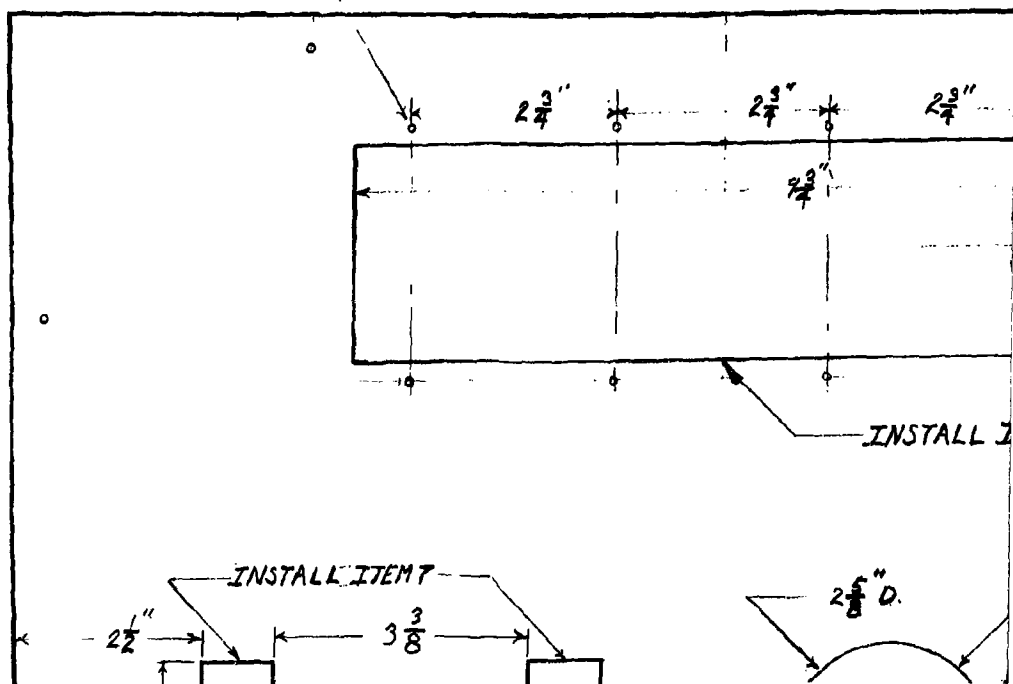
LIST OF MATERIALS

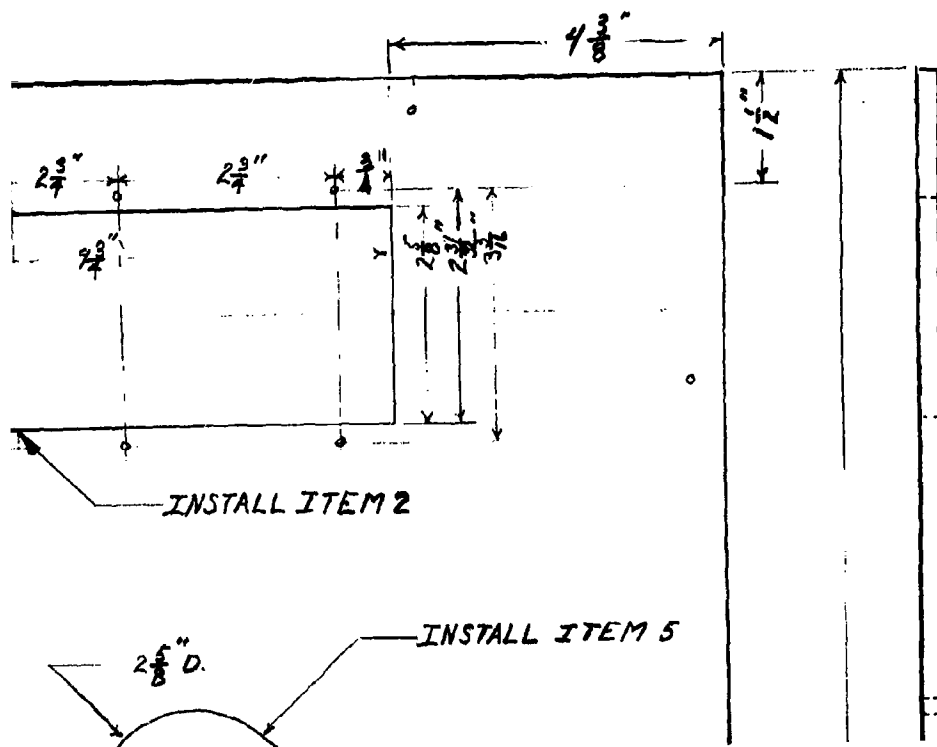
APPROVED FOR USMC PRE-RELEASED COPY DATE TOLERANCE ERAC DEC 84 .004	E-BAY DISTRIBUTION BOX (AOP POWER DISTRIBUTION SYSTEM)	DEPARTMENT OF THE NAVY U.S. MARINE CORPS WASH. 25 D.C. DWG NO.
SCALE 3" = 1'	SHEET 1 OF 3	

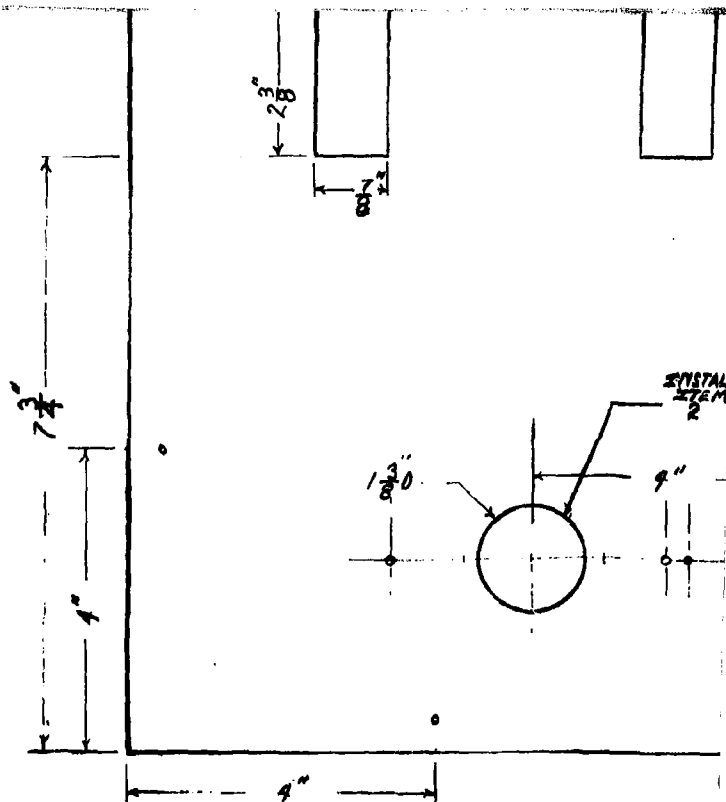
ENCLOSURE (1)

7

NOTE #5







RECEPTACLES.

5. MOUNTING SCREW HOLES FOR DUPLEX SHEET METAL SCREWS.

4. PANEL WILL BE MOUNTED WITH PAN HEAD

3. FINISH BOTH SIDES WITH SEMI-GLOSS WHITE.

USE OF ACCOMPANYING TEMPLATES.

2. MOUNTING OF METERS WILL BE AFFORDED BY MOUNTING HOLES.

AFFORDED BY USING THE UNIT AS A TEMPLATE FOR DRILLING

NOTES — 1. MOUNTING OF CIRCUIT BREAKERS WILL BE

5

8	1		HUBBELL-3930-6 RECA.		OR EQUIV
			NUMBER 79 3900 WL		OR EQUIV
7	2		GE.-78A. BRUNT GREENIAS		OR EQUIV
6	1		WESTON 967 AC METER O-REC		OR EQUIV
5	1		GIDALE-PRAM FREQUENCY 9967		OR EQUIV
4	1		SWITCH DPST LEVITON 5744		OR EQUIV
3	2		HUBBELL-7910-8 RECA.		OR EQUIV
2	4		HUBBELL-3552 DUP. RECP.		OR EQUIV
1	1		4 X 10 1/2 X 10 1/2 MASONITE	MASONITE	MARINE GRADE
ITEM	REQD	DWG NUMBER	DESCRIPTION	MATL	MATL SPEC

LIST OF MATERIALS

APPROVED FOR U.S.M.C.

PRE-RELEASED COPY

DATE:

TOLERANCE

FRACTION DEC.

1/64 .004

PANEL BOARD FOR
E BAY DISTRIBUTION
BOX

(AOP POWER DISTRIBUTION
SYSTEM)

SCALE 6"=1'

DEPARTMENT OF THE
U.S. MARINE CORPS
WASH. D.C.

DWG NO.

SHEET

ENCLOSURE (1)

8	1		HUBBELL #3330-6 RECA		OR EQUIV	
			NUMBER TQ 3200 WL		OR EQUIV	
7	2		GE. - 75A. CIRCUIT BREAKER		OR EQUIV	
6	1		WESTON #67 AC METER 0-250		OR EQUIV	
5	1		DIDDLE-PRAN FREQUENCY 9967		OR EQUIV	
4	1		SWITCH DPBT LEVITON 5744		OR EQUIV	
3	2		HUBBELL #7910-8 RECA		OR EQUIV	
2	4		HUBBELL #3252 DUP. RECP.		OR EQUIV	
1	1		4 X 10 1/2 X 10 1/2 MASONITE	MASONITE	MARINE GRADE	
ITEM	REQD	DWG NUMBER	DESCRIPTION	MATL	MATL. SPEC	

LIST OF MATERIALS

APPROVED FOR U.S.M.C.

PRE-RELEASED COPY

DATE:

TOLERANCE

FRAC. DEC.

1/64 .004

PANEL BOARD FOR
E BAY DISTRIBUTION
BOX

(AOP POWER DISTRIBUTION
SYSTEM)

SCALE 6"=1'

DEPARTMENT OF THE NAVY
U.S. MARINE CORPS
WASH. 25, DC.

DWG NO.

SHEET 2 OF 3

ENCLOSURE (1)

6

CONNECTING CABLE SPECIFICATIONS

GENERATOR TO E-BAY CABLE

GENERATOR CONNECTION - 4 - NO 6 AWG SOLDERLESS LUGS

CABLE - 150 FT. 6 AWG 4 COND. WITH GROUND, RHW ITEM 15

E-BAY CONNECTION - HUBBELL NO. 7764 ITEM 5

E-BAY TO M-BAY CABLE

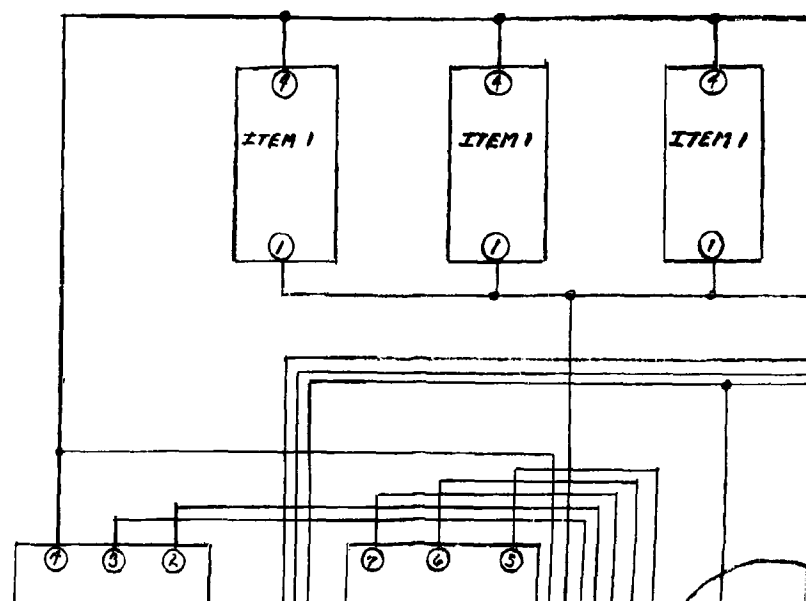
E-BAY CONNECTION - HUBBELL NO. 7764 ITEM 5

CABLE - 150 FT. 8 AWG 4 COND. WITH GROUND, RHW ITEM 14

M-BAY CONNECTION - HUBBELL NO. 7764 ITEM 5

HARNESS CONNECTIONS

2 HUBBELL NO. 3331-G CONNECTORS ARE SUPPLIED WITH
POWER DISTRIBUTION SYSTEM TO CONNECT INTO PRESENT
HARNESS SYSTEMS.

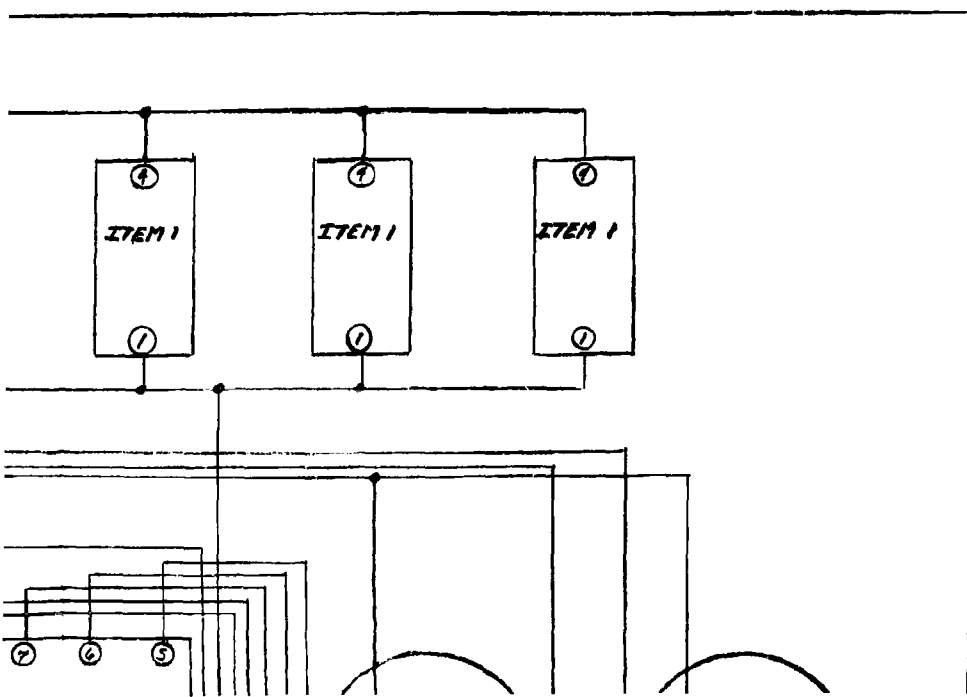


UGS

15

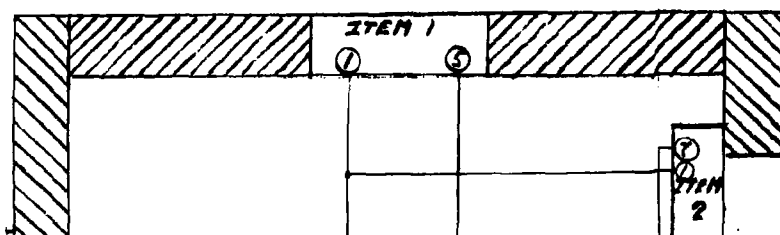
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11TH



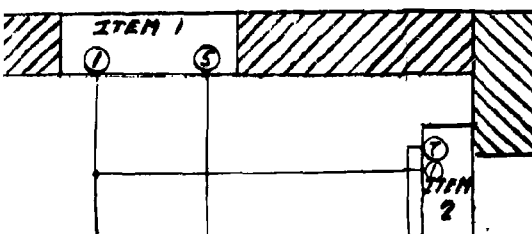
ITEM	REQ'D	DISCRIPTION
1	6	HUBBELL NO. 5252 DUPLEX RECEPTACLES *
2	3	HUBBELL NO. 7410-B TWIST-LOCK RECEPTACLES *
3	3	HUBBELL NO. 7958 TWIST-LOCK RECEPTACLES *
4	3	HUBBELL NO. 7382 LIFT COVER *
5	3	HUBBELL NO 7764 TWIST-LOCK CONNECTORS *
6	4	SOLDERLESS LUG NO. 8 AWG.
7	1	VOLTMETER 0-250 VAC WESTON NO. 967 *
8	1	FREQ. METER DIDDLE FRAM NO. 9967 *
9	1	SWITCH SPDT LEVITON SP44 *
10	2	CIRCUIT BREAKER G.E. TQ 32050 WL *
11	1	PLYWOOD $\frac{3}{4}$ " MARINE GRADE 4'X5'
12	1	PLYWOOD $\frac{3}{8}$ " MARINE GRADE 1'X2'
13	1	MASONITE $\frac{1}{2}$ " MARINE GRADE 20"X20"
14	150'	CABLE 4 COND. 8 AWG WITH GROUND RNRW SIMPLEX
15	150'	CABLE 4 COND. 6 AWG WITH GROUND RNRW SIMPLEX
16	20'	WIRE RNRW 8 AWG GENERAL CABLE TYPE TA
17	10'	WIRE RNRW 12 AWG GENERAL CABLE TYPE TA
18	10'	WIRE RNRW 18 AWG GENERAL CABLE TYPE TA
19	2	HUBBELL NO 3330-G TWIST LOCK RECEPTACLES
20	2	HUBBELL NO 3331-G TWIST LOCK CONNECTORS

COMPOSITE LIST OF MATERIALS
FOR POWER DISTRIBUTION SYSTEM

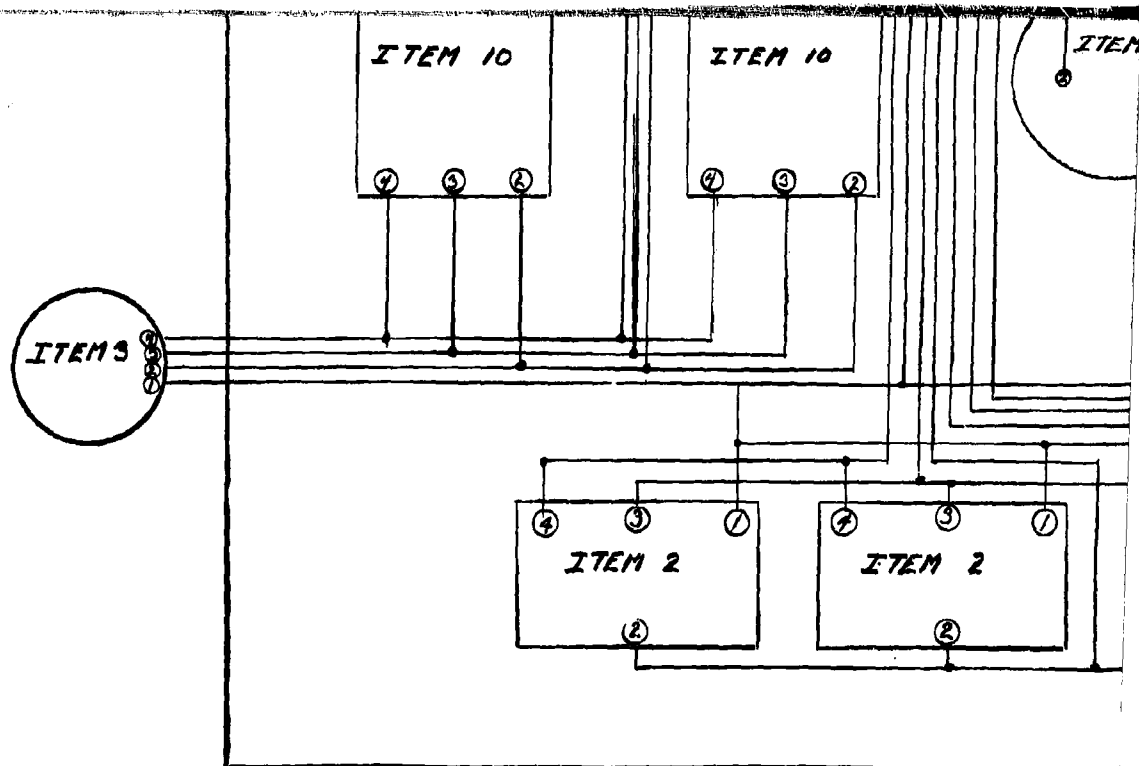


ITEM	REQ'D	DISCRIPTION
1	6	HUBBELL NO. 5252 DUPLEX RECEPTACLES *
2	3	HUBBELL NO. 7410-B TWIST-LOCK RECEPTACLES *
3	3	HUBBELL NO. 7958 TWIST-LOCK RECEPTACLES *
4	3	HUBBELL NO. 7382 LIFT COVER *
5	3	HUBBELL NO 7764 TWIST-LOCK CONNECTORS *
6	4	SOLDERLESS LUG NO. 8 AWG.
7	1	VOLTMETER 0-250 VAC WESTON NO. 967 *
8	1	FREQ. METER DIODE FRAM NO. 9867 *
9	1	SWITCH SPDT LEVITON SP44 *
10	2	CIRCUIT BREAKER G.E. TG 32050 WL *
11	1	PLYWOOD $\frac{3}{4}$ " MARINE GRADE 1'X5'
12	1	PLYWOOD $\frac{3}{4}$ " MARINE GRADE 1'X2'
13	1	MASONITE $\frac{1}{4}$ " MARINE GRADE 20'X20"
14	150'	CABLE 4 COND. 8 AWG WITH GROUND RHW SIMPLEX T30219 *
15	150'	CABLE 4 COND. 6 AWG WITH GROUND RHW SIMPLEX T30221 *
16	20'	WIRE RHW 8 AWG GENERAL CABLE TYPE TA
17	10'	WIRE RHW 12 AWG GENERAL CABLE TYPE TA
18	10'	WIRE RHW 18 AWG GENERAL CABLE TYPE TA
19	2	HUBBELL NO 3330-G TWIST LOCK RECEPTACLES
20	2	HUBBELL NO 3331-G TWIST LOCK CONNECTORS

COMPOSITE LIST OF MATERIALS
FOR POWER DISTRIBUTION SYSTEM



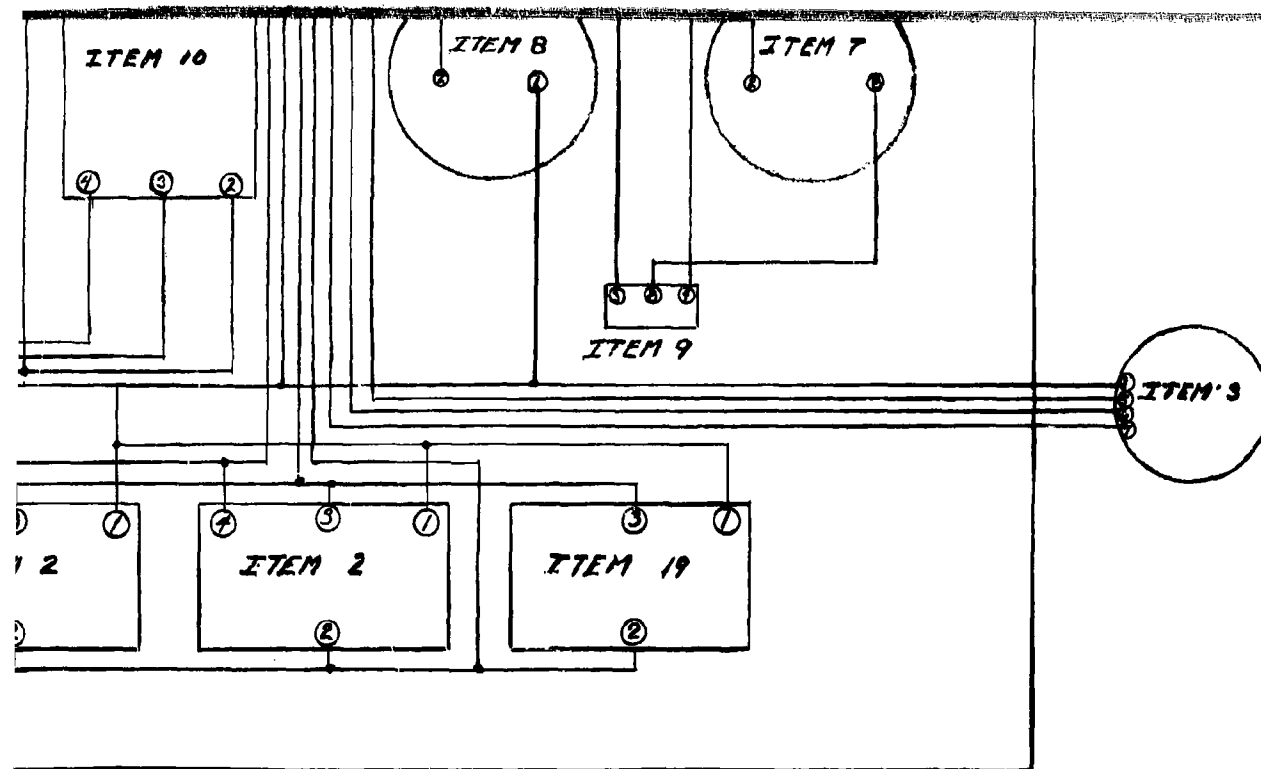
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E - BAY DISTRIBUTION BOX

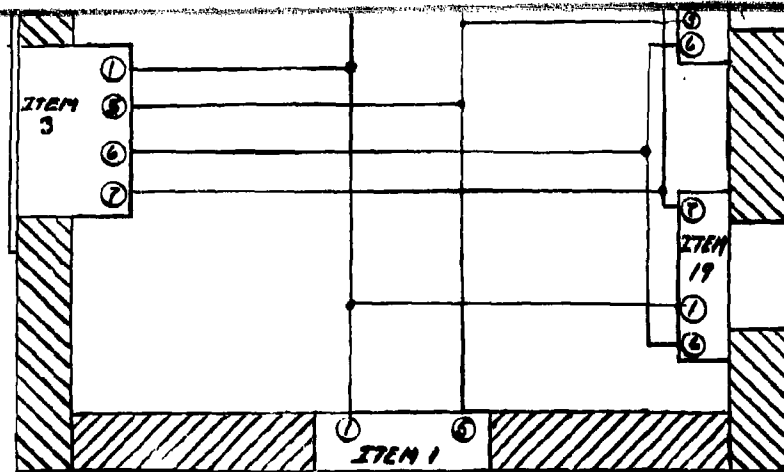
INTERNAL WIRING SPECIFICATIONS
INSTRUMENTS-SOLID 18 AWG GENERAL CABLE TA TYPE
E-BAY - SOLID 8 AWG GENERAL CABLE TA TYPE
M-BAY - SOLID 12 AWG GENERAL CABLE TA TYPE

5



E - BAY DISTRIBUTION BOX

6

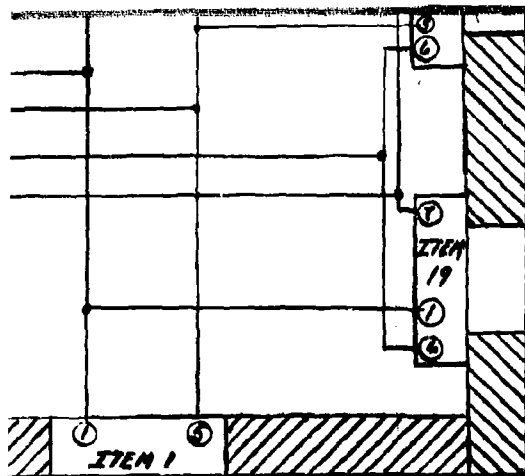


M - BAY DISTRIBUTION BOX

7

APPROVED FOR USMC		WIRING SCHEMATIC (AOP POWER DISTRIBUTION SYSTEM)
PRE-RELEASED COPY		
DATE		
TOLERANCE		
FRAC.	DEC.	SCALE 6" = 1'

ENCLOSURE

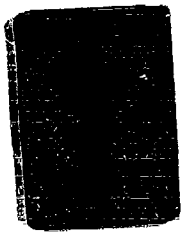


BAY DISTRIBUTION BOX

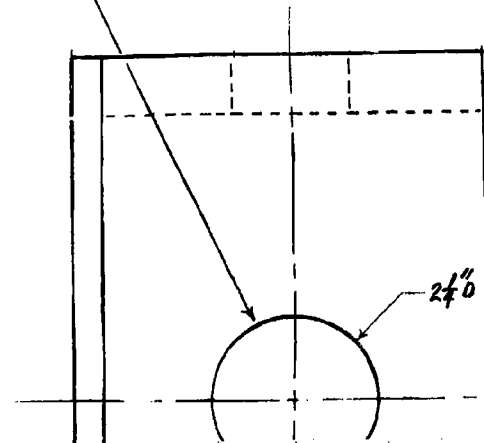
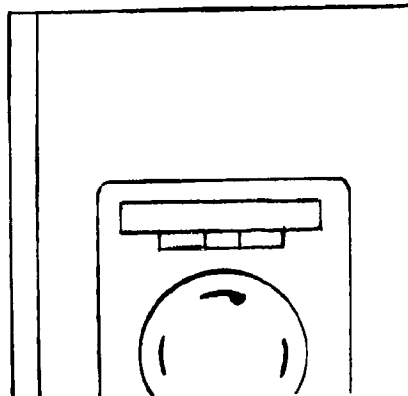
APPROVED FOR USMC	WIRING SCHEMATIC (AOP POWER DISTRIBUTION SYSTEM)	DEPARTMENT OF THE NAVY U.S. MARINE CORPS WASH. 25, D.C.
PRE-RELEASED COPY DATE		DWG. NO.
TOLERANCE FRAC. DEC.		SHEET 3 OF 3
SCALE 6" = 1'		

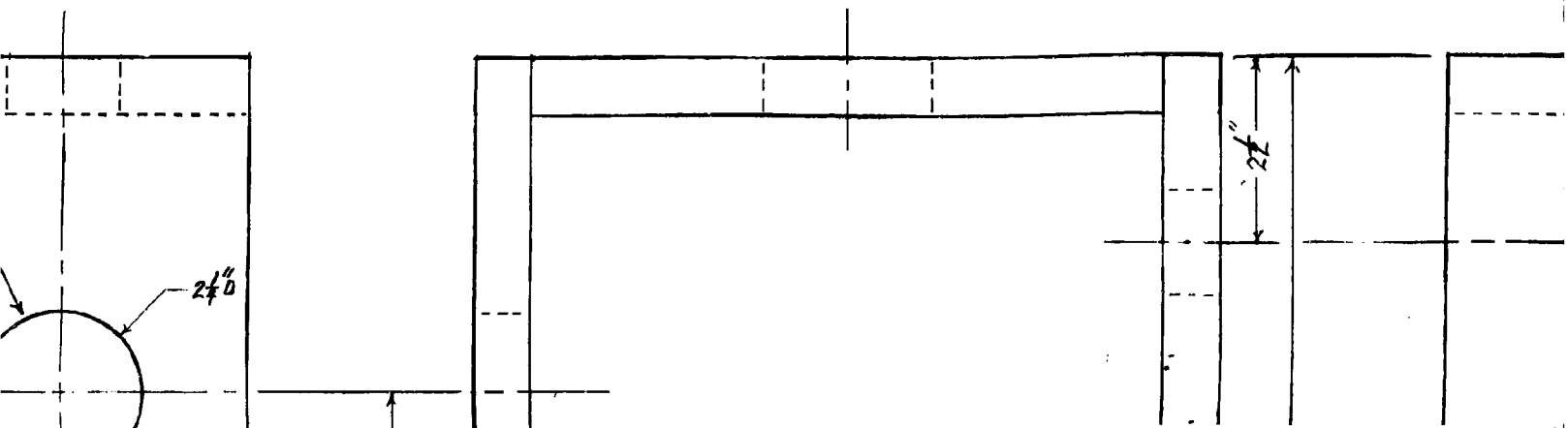
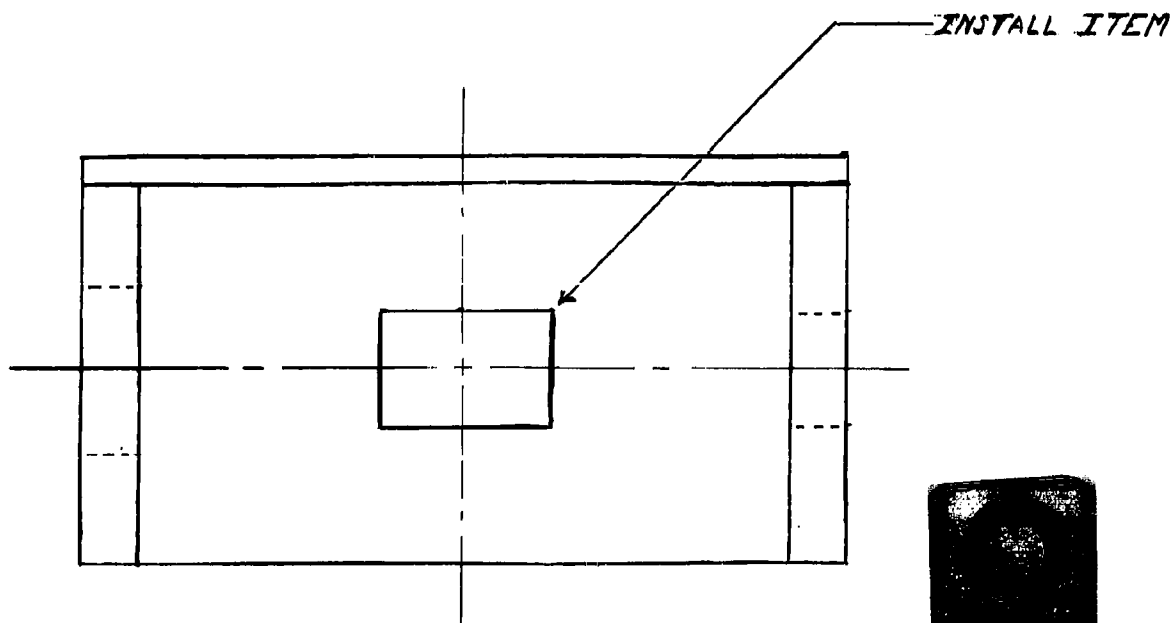
ENCLOSURE (1)

8



INSTALL ITEMS 5 AND 6

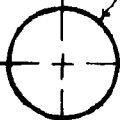




—INSTALL ITEM 3



INSTALL ITEM 4



9"

INSTALL ITEM 4

9"

4



SIDE VIEW SHOWING ITEMS
5 AND 6 INSTALLED

5

FLATHEAD WOOD SCREWS.

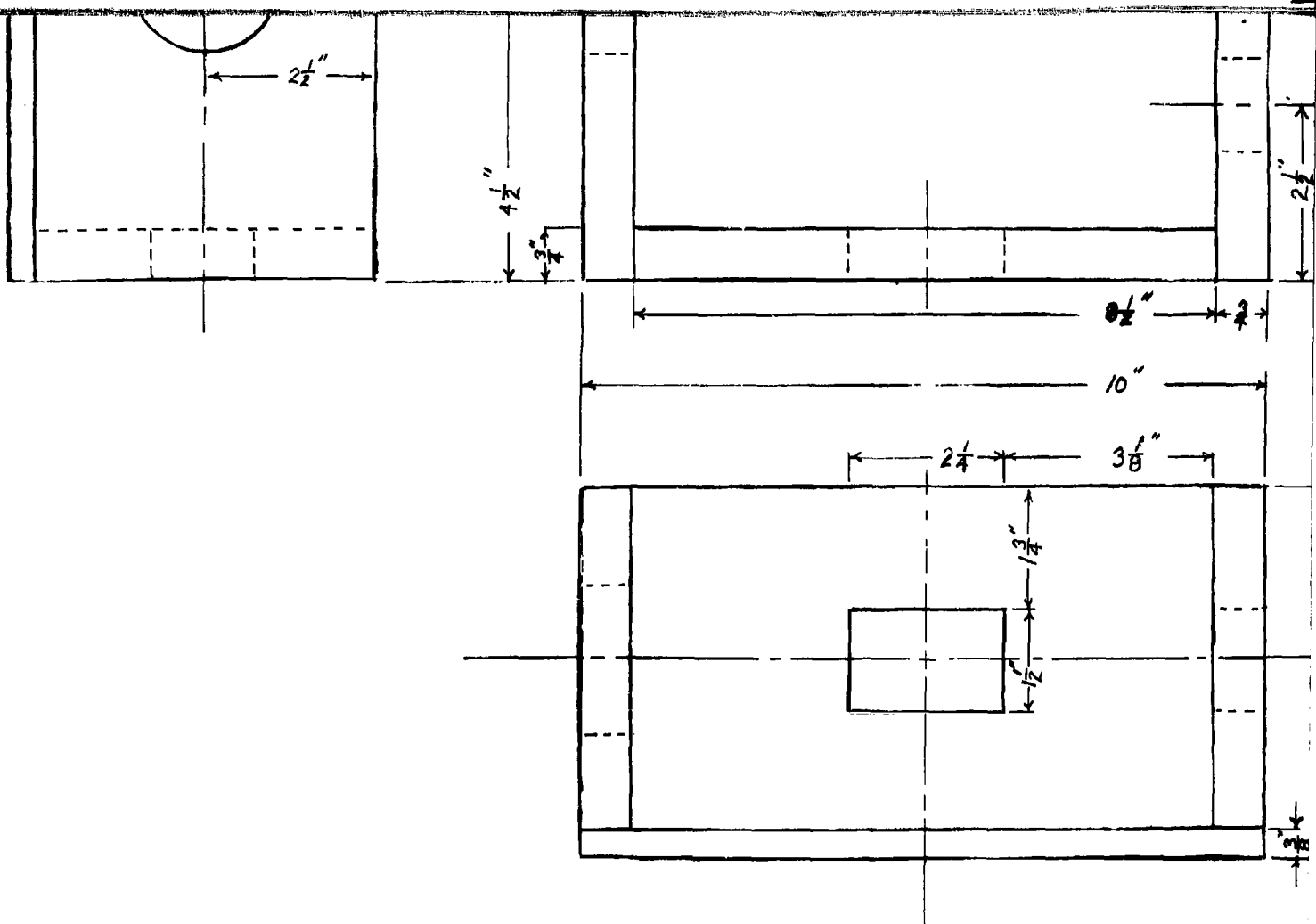
3. SECURE TOP COVER TO BOX WITH 8x $\frac{3}{4}$ "

GREEN 23 LUSTERLESS ENAMEL 8010-526-1612

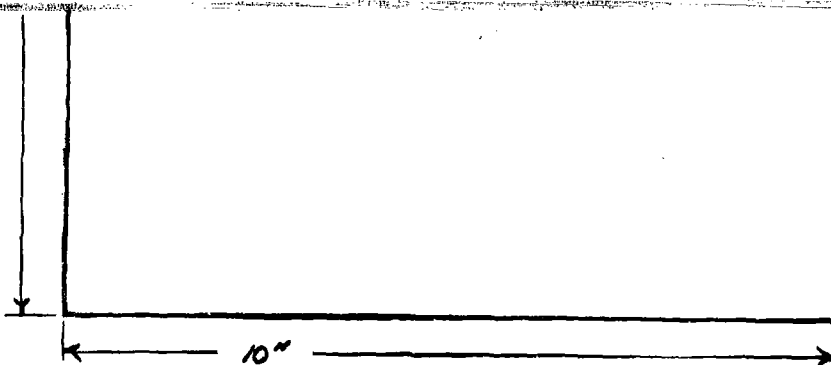
2. FINISH ALL SURFACES WITH U.S.M.C.

FINISHING NAILS AND WATERPROOF GLUE

NOTES 1. CONSTRUCTION WILL BE WITH ADEQUATE SIZE



6



INSTALL ITEM 7

TOP VIEW - COVER

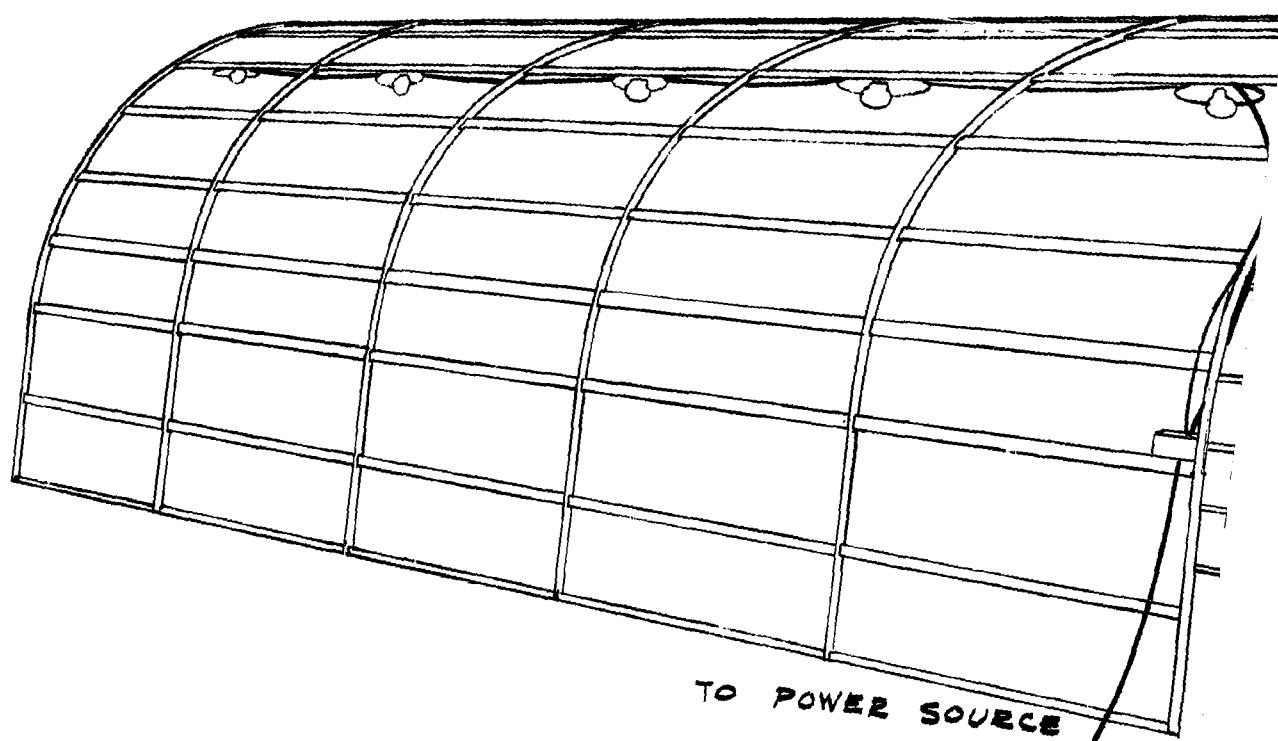
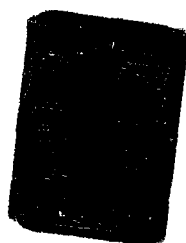
7	1		HUBBELL NO. 3330-B RECA		OR EQUIV.	
6	1		HUBBELL LIFT COVER 7382		OR EQUIV	
5	1		HUBBELL NO. 7958 PL RECA		OR EQUIV	
4	1		HUBBELL NO. 7410-B PL RECA		OR EQUIV	
3	2		HUBBELL NO 5252 DUP RECA		OR EQUIV	
2	1		3/4" X 1' X 2' PLYWOOD	PLYWOOD	MARINE	
1	1		3/4" X 1' X 2' PLYWOOD	PLYWOOD	MARINE	
ITEM	REQ'D	DWG. NUMBER	DESCRIPTION	MATL	MATL. SPEC.	

LIST OF MATERIALES

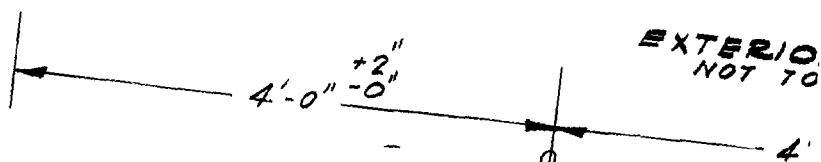
APPROVED _____ PRE-RELEASED COPY DATE _____ TOLERANCE FRAC. DEC. 1/64 .004		EXTENSION BOX M - DAY (AOP POWER DISTRIBUTION SYSTEM) SCALE 6" = 1'	DEPARTMENT OF THE NAVY U.S. MARINE CORPS WASH. D.C. DWG. NO. _____ SHEET 1 OF 1
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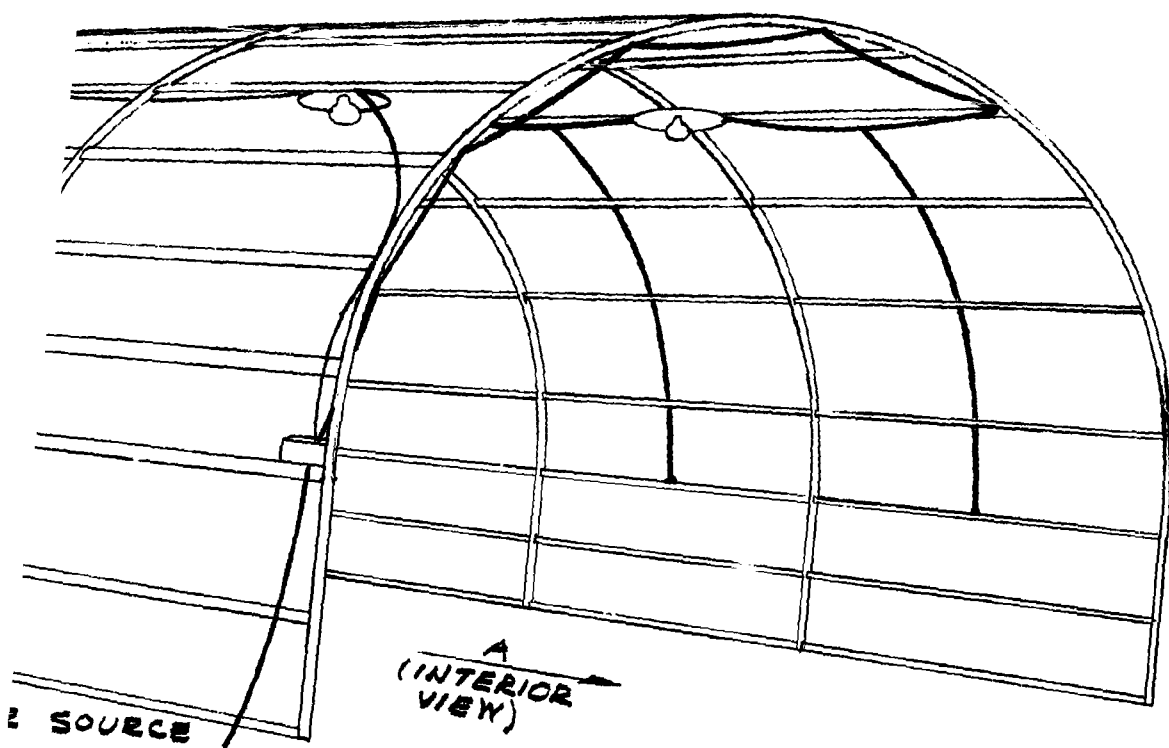
ENCLOSURE (2)

8



TO POWER SOURCE



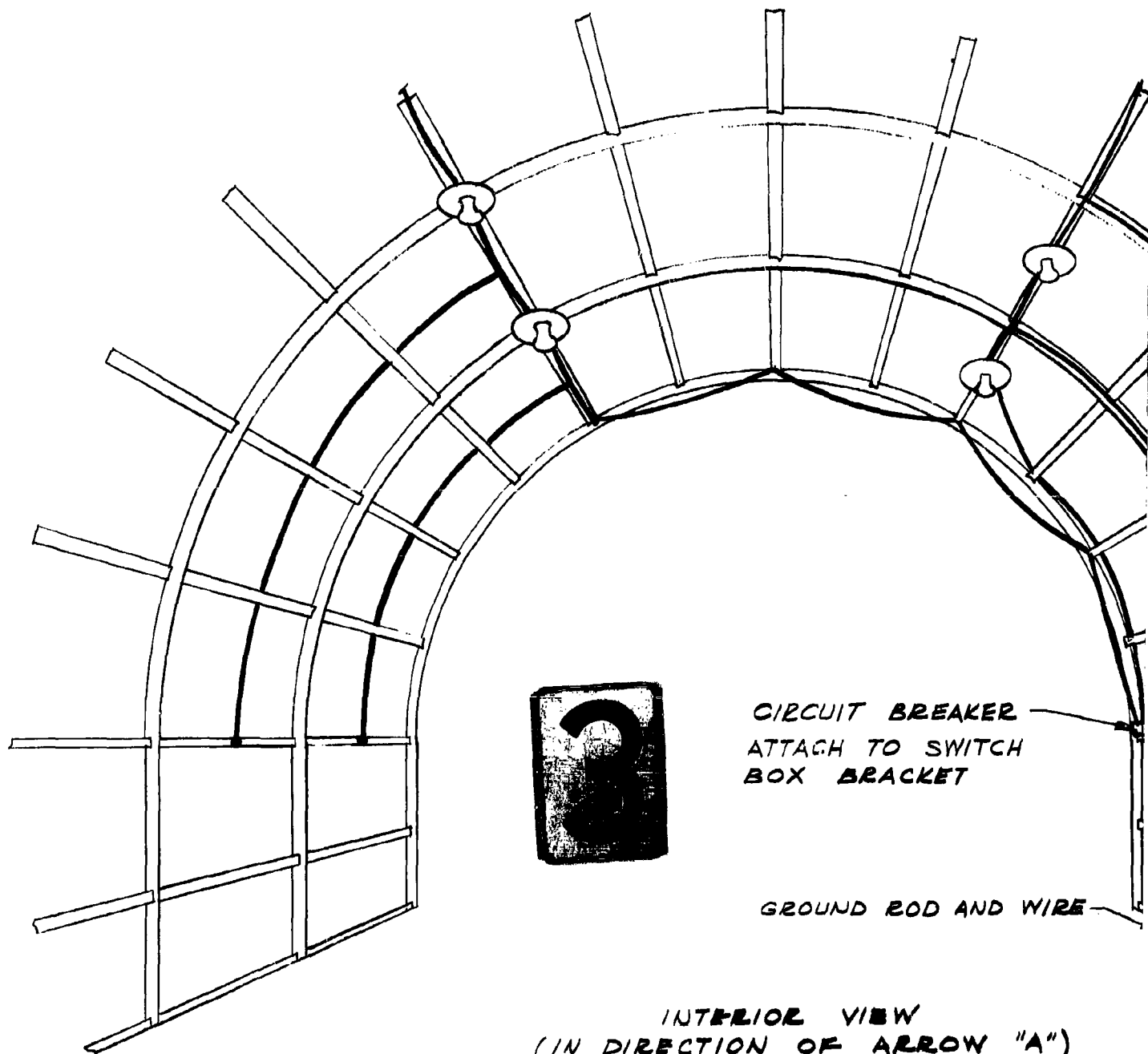


EXTERIOR VIEW
NOT TO SCALE

4'-0" $\pm 2"$
-0"



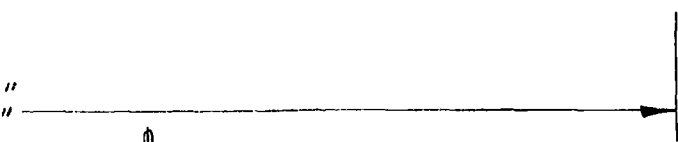
1'-0" $\pm 2"$
-0"

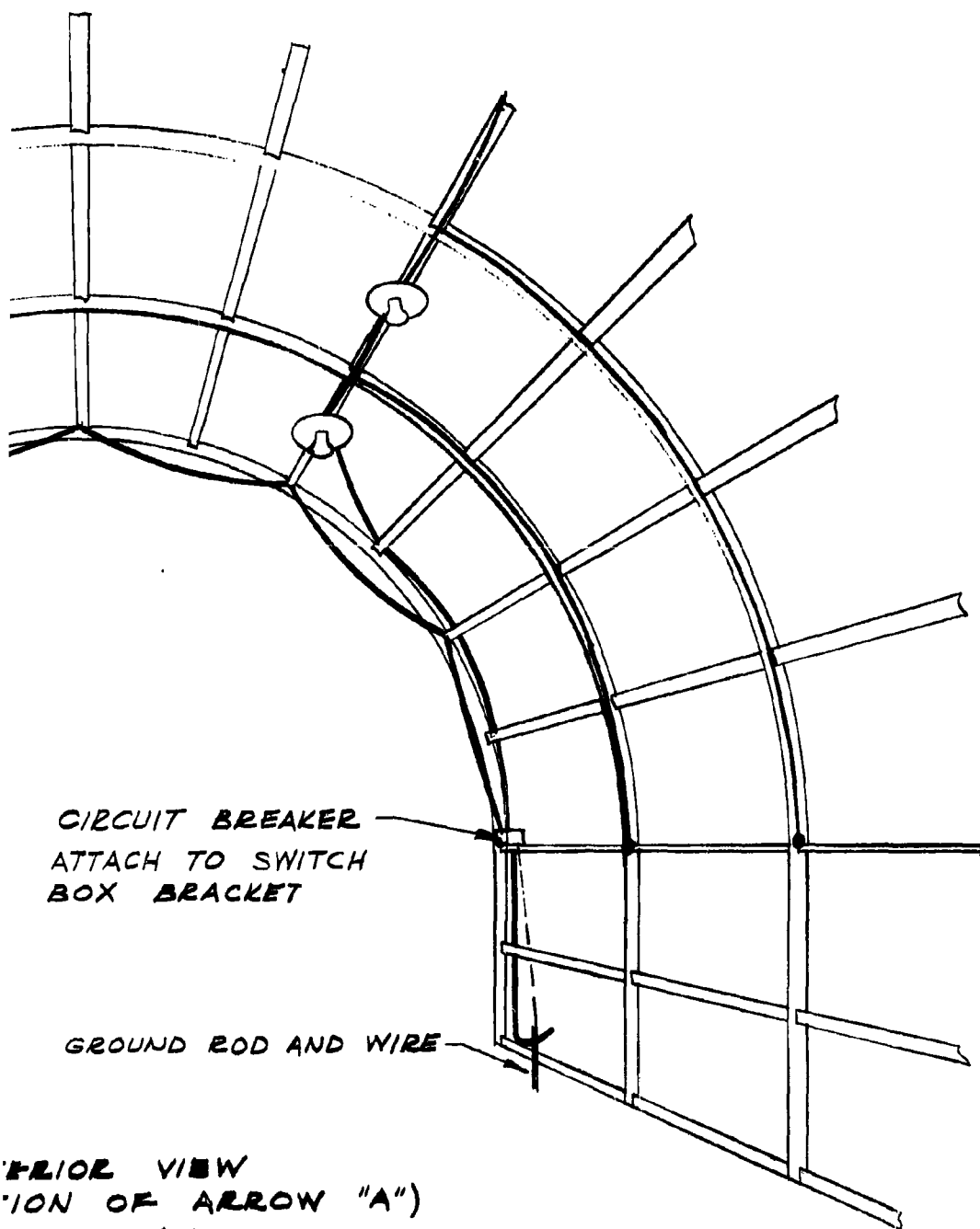


CIRCUIT BREAKER
ATTACH TO SWITCH
BOX BRACKET

GROUND ROD AND WIRE

INTERIOR VIEW
(IN DIRECTION OF ARROW "A")
NOT TO SCALE

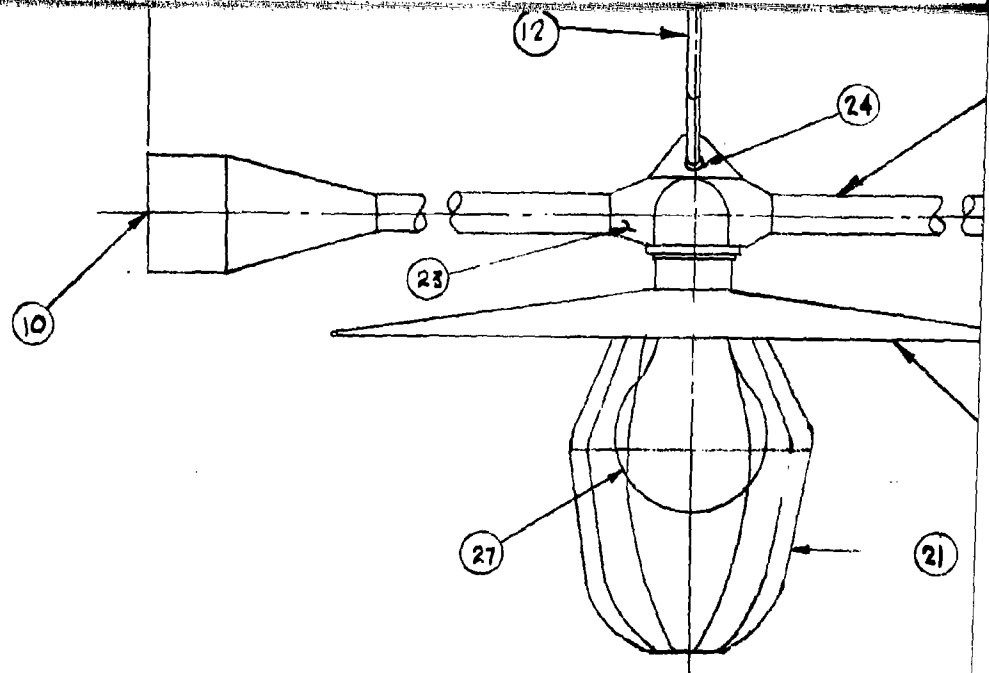




CIRCUIT BREAKER
ATTACH TO SWITCH
BOX BRACKET

GROUND ROD AND WIRE

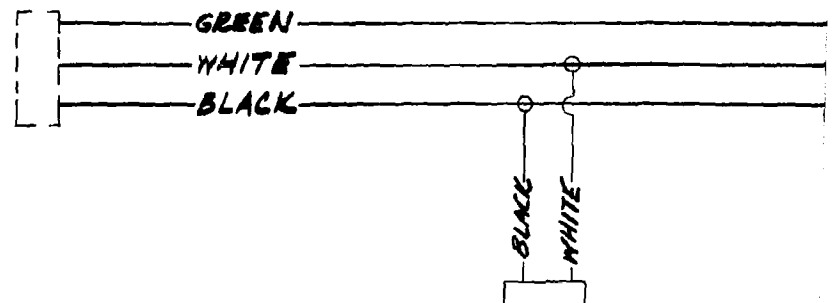
FRONT VIEW
(SECTION OF ARROW "A")
NOT TO SCALE

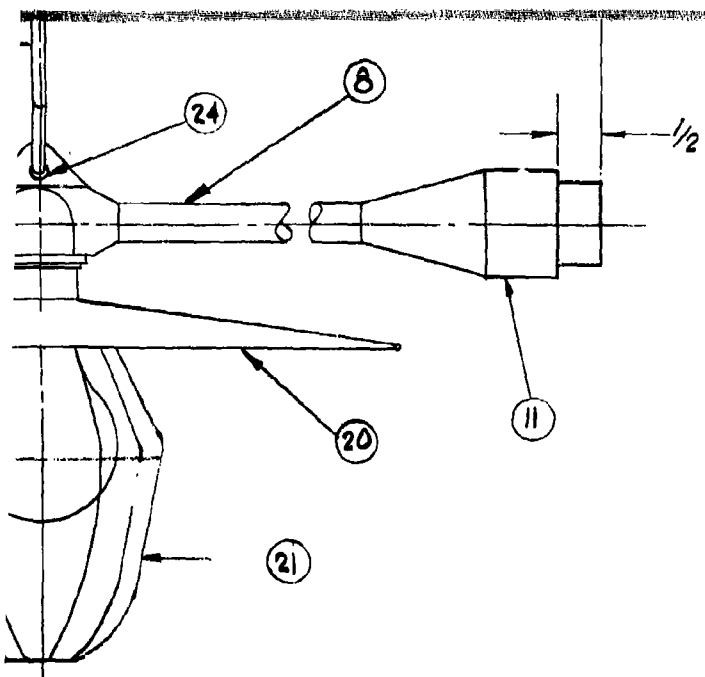


NOT TO SCALE

⑱ (LIGHTING ASS'Y)

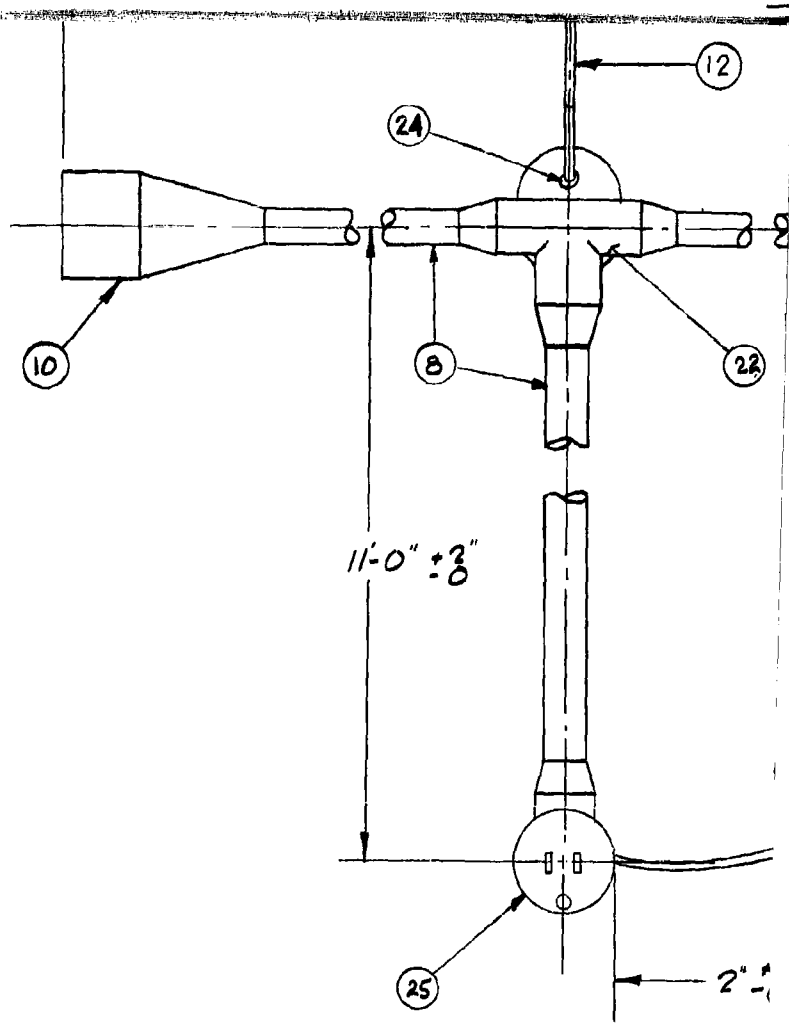
5





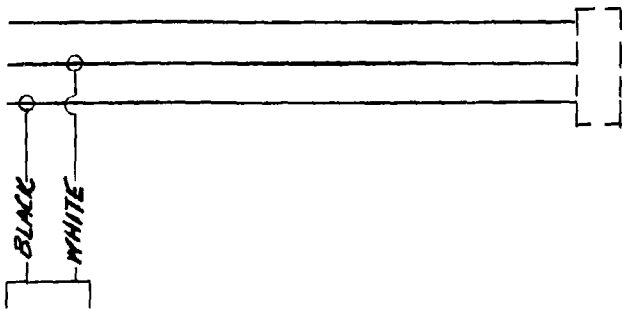
TO SCALE

(WIRING ASS'Y)

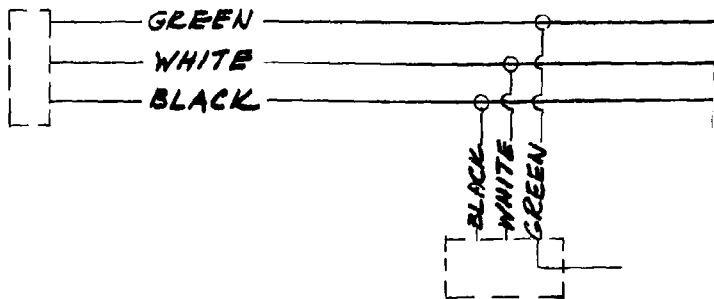


NOT TO SCALE

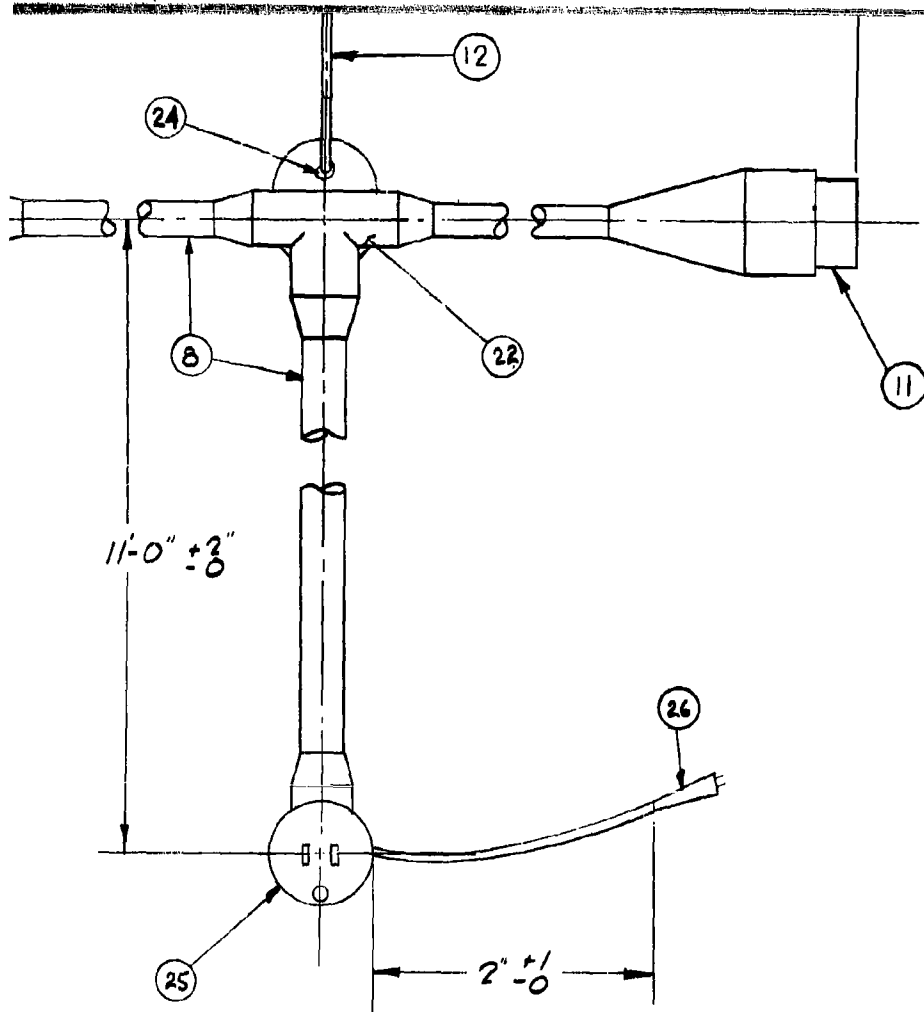
(19) (OUTLET ASSY)



6

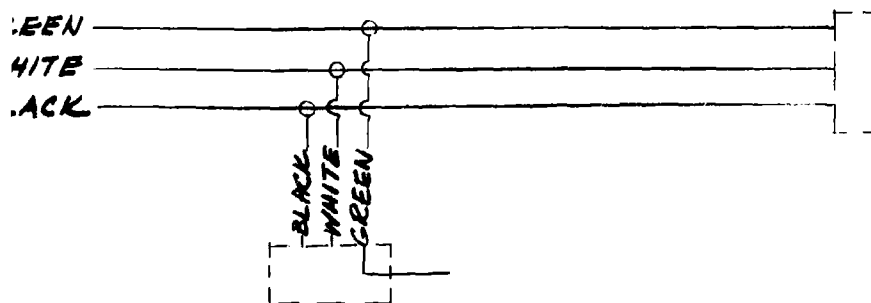


SCHEMATIC WIRING DIAGRAMS



NOT TO SCALE

19 (OUTLET ASSY)



7

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DATE:

TOLFRANCE

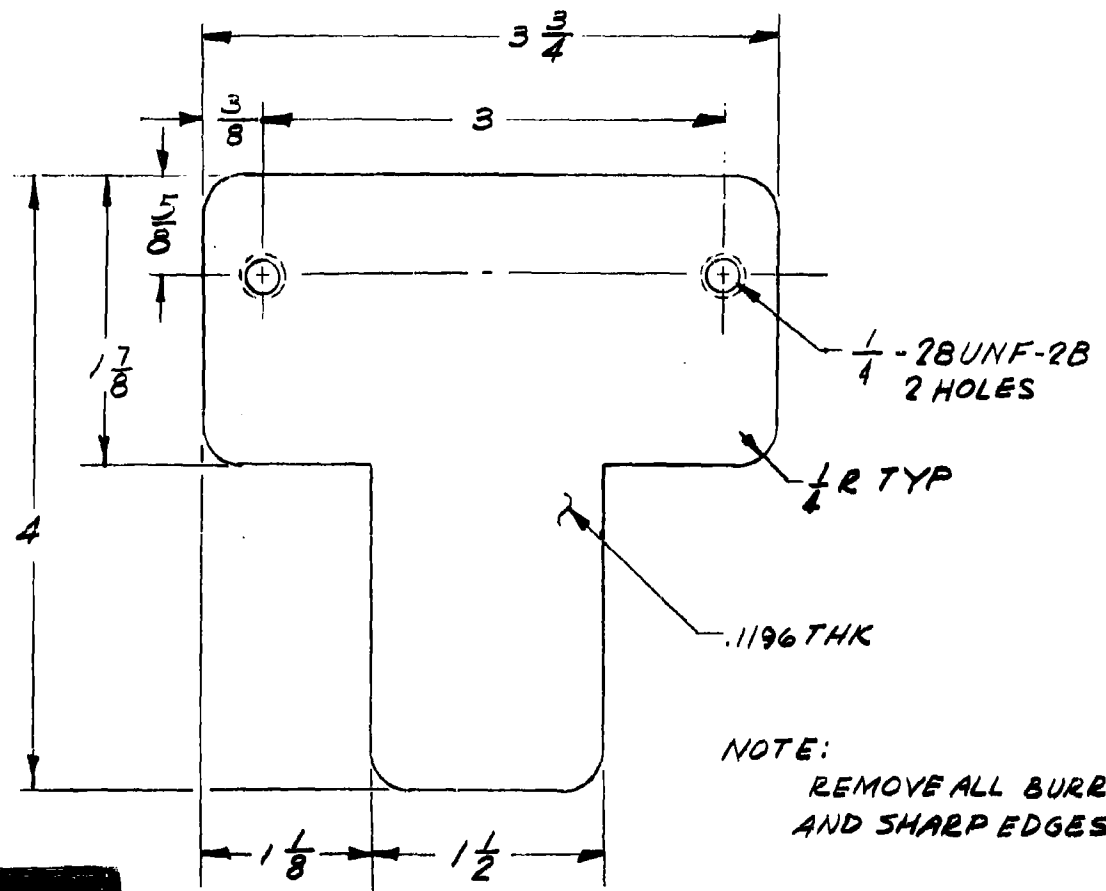
FRAC.

DE

8

APPROVED FOR USMC	WIRING HARNESS INSTALLATION	DEPARTMENT OF THE NAVY
PRE-RELEASE COPY DATE:		U.S. MARINE CORPS
TOLFRANCE		WASH. 25, D.C.
FRAC.	DEC.	DWG. NO.
SCALE: AS NOTED		SHEET 1 OF 2

ENCLOSURE (3)

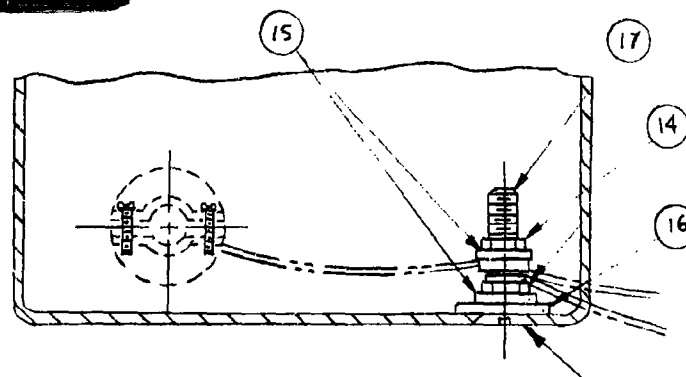


NOTE:
REMOVE ALL BURRS
AND SHARP EDGES

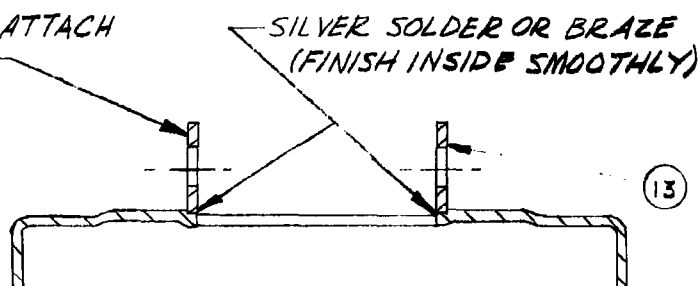


(5)
FULL SIZE

REMOVE EXISTING TAB A
NEW GUARDS AS SHO

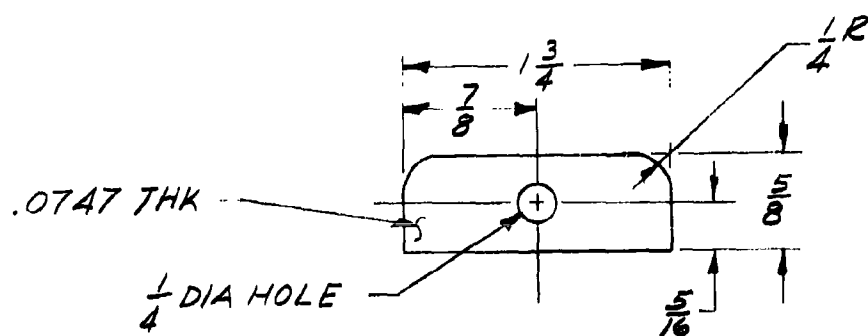


EXISTING TAB AND ATTACH
ARDS AS SHOWN —



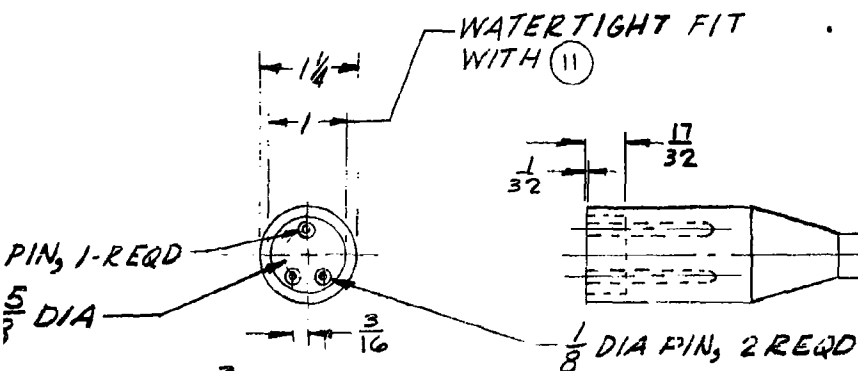
$\frac{5}{8}$ DIA





(13)

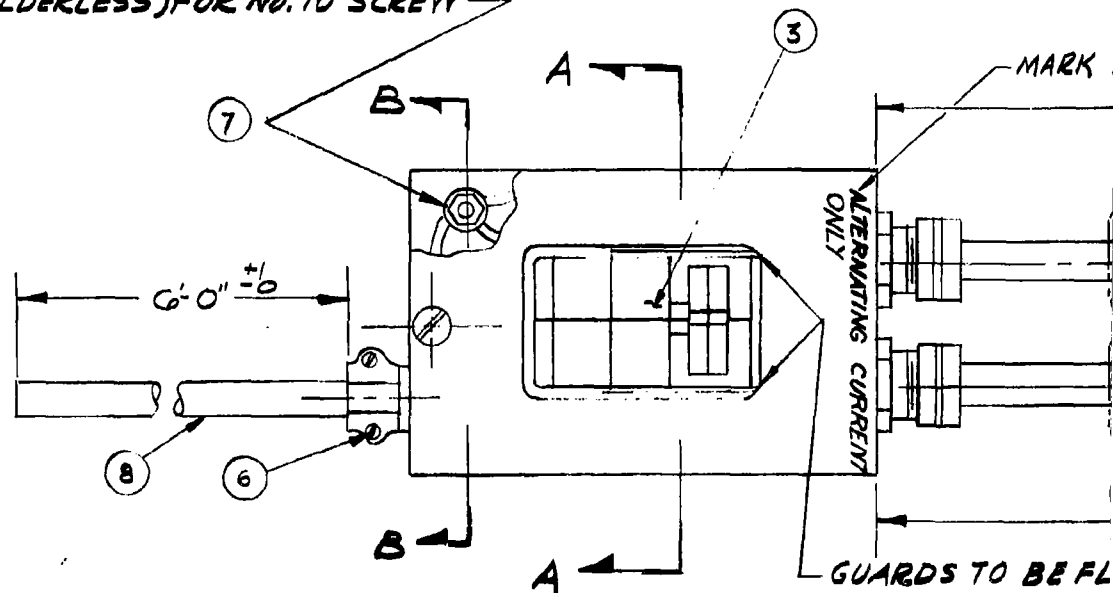
FULL SIZE



SECTION B-B CIRCUIT BREAKER BOX

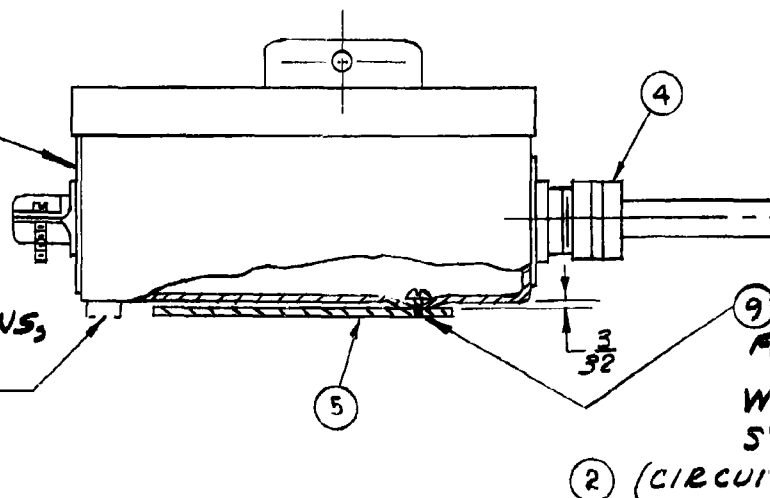
HEAD OF SCREW TO BE FLUSH
WITH SURFACE OF ENCLOSURE

ALL WIRE TERMINALS IN
ENCLOSURE SHALL BE LUGGED
(SOLDERLESS) FOR NO. 10 SCREW



CIRCUIT BREAKER BOX,
 $3\frac{13}{16}$ WIDE X $5\frac{7}{8}$ LG X
 $2\frac{7}{8}$ DEEP

NOTE:
FLATTEN TWO PROJECTIONS,
MAKE FLUSH WITH BODY,
THIS END ONLY

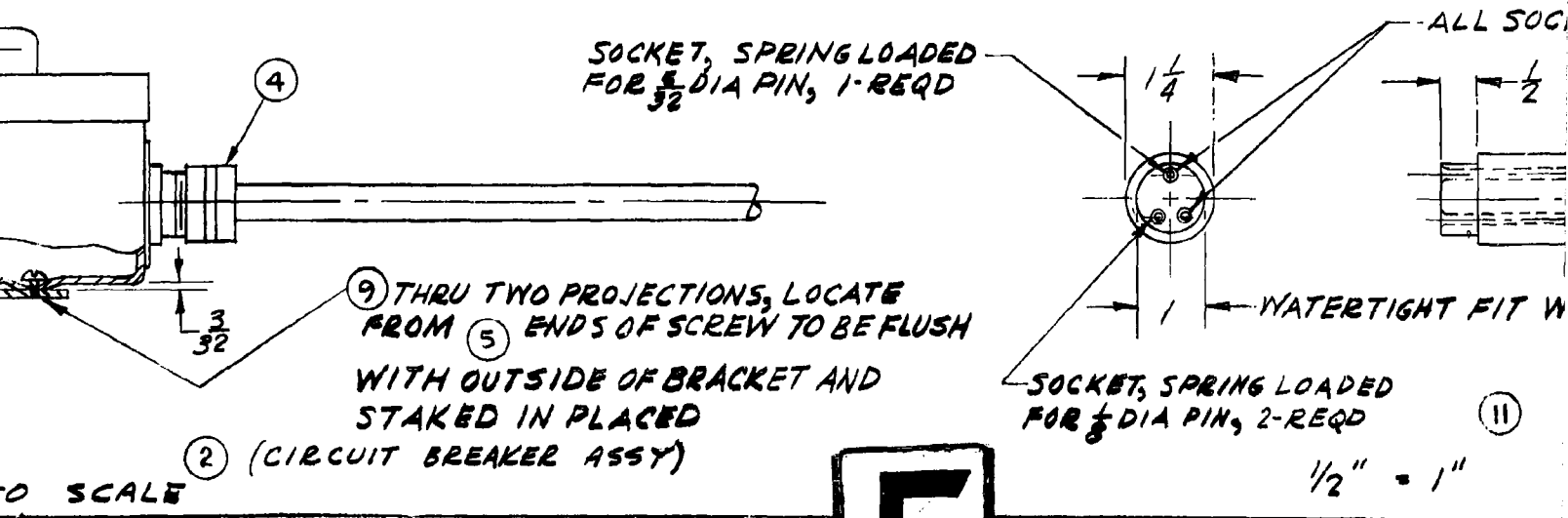
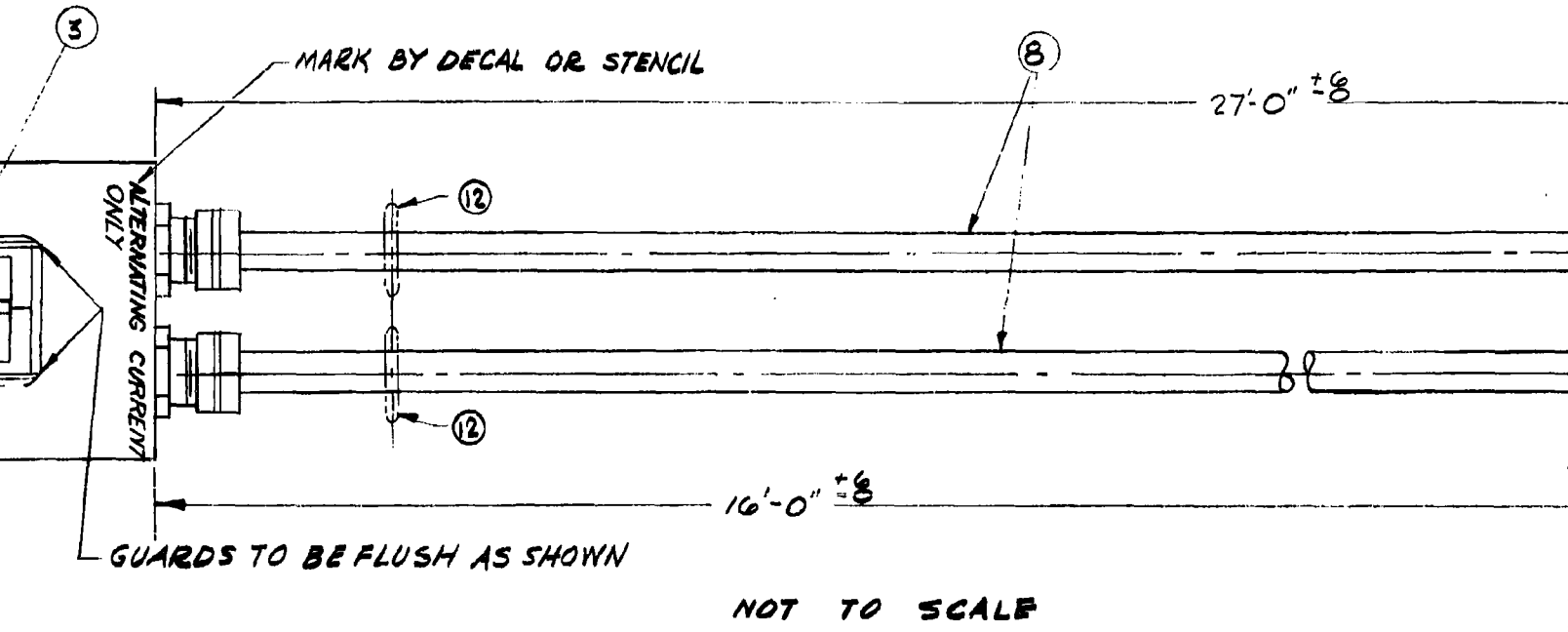


NOT TO SCALE

4

AD OF SCREW TO BE FLUSH
H SURFACE OF ENCLOSURE

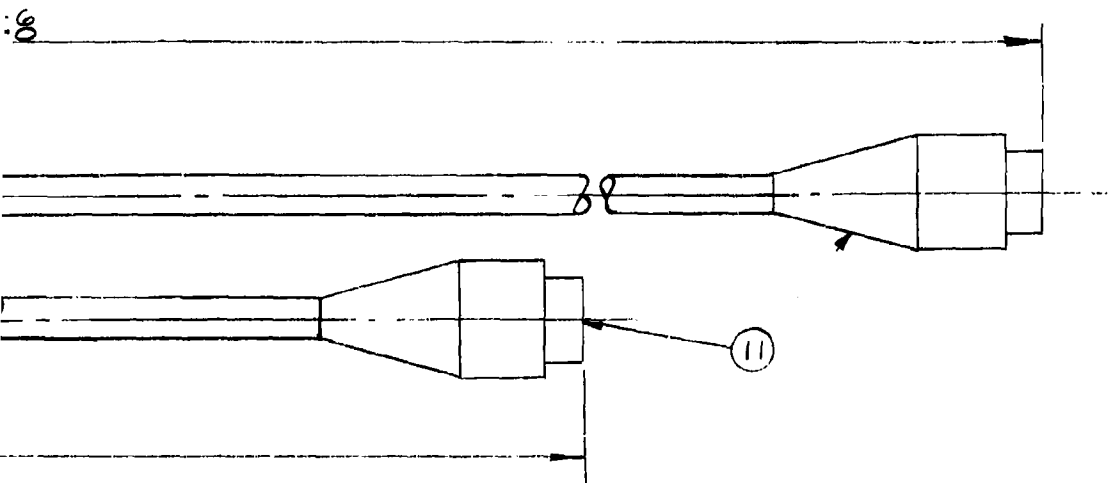
SECTION A-A
COVER, CIRCUIT BREAKER BOX



8

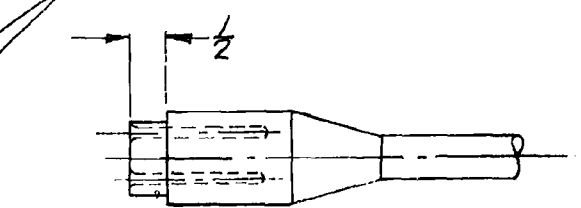
⑩

1/2" - 1"



⑪

ALL SOCKETS LOCATED THE SAME AS PINS ON ⑩



6

TERTIGHT FIT WITH ⑩

PADED
REQD ⑪

1/2" - 1"

① (WIRING HARNESS ASSY)
MADE FROM ONE ② (CIRCUIT
BREAKER ASSY), NINE ⑧
(LIGHTING ASSY) & NINE ⑨
(OUTLET ASSY)

27	15	LAMP, INS
26	9	CHIP, ELEC
25	9	SOCKET, U
24	18	FERRULE
23	9	TEE, LAM
22	9	TEE, MOU
21	9	GUARD,
20	9	REFLECT
19	REF	OUTLET
18	REF	LIGHTING
17	1	SCR, MAC
16	1	WASHER,
15	2	WASHER,
14	2	NUT, HE
13	2	GUARD, C
12	24	HOOK, HA
11	20	CONNECT
10	18	CONNECT
9	2	SCREW, M
8	1	CORD, 3C
7	9	LUG, GOLD
6	1	CONNECT
5	1	HANGER,
4	2	CONNECT
3	1	SWITCH,
2	REF	CIRCUIT
1	REF	WIRING H
ITEM	REQD	

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FRAC. DEC.

27	15	LAMP, INSIDE, FROSTED, ROUGH SER, 200W	COMMERCIAL
26	9	CLIP, ELECT, JAW GRIP	W-C-440
25	9	SOCKET, UTILITY, MOULDED W/2" LG. GRD. WIRE	JOY MFG. CO. NO. X 8591, OR EQUIV.
24	18	FERRULE, 1/4 ID	BRASS
23	9	TEE, LAMP SOCKET, MED., SCR. BASE, MOULDED	JOY MFG. CO. NO. X 8590-29, OR EQUIV.
22	9	TEE, MOULDED	JOY MFG. CO. NO. X 8582-9, OR EQUIV.
21	9	GUARD, LAMP, 1 1/2 COLLAR	STL, GALV, JOY MFG CO NO R8940 OR EQUIV
20	9	REFLECTOR, LIGHT, 14" DIA.	P&N 6210-273-9215
19	REF	OUTLET ASSY	PARA 3.6.1, MIL-F-40132
18	REF	LIGHTING ASSY	PARA 3.6.1, MIL-F-40132
17	1	SCR, MACH. FL. HD. #10-32 NF-2A X 7/8 LG.	BRASS
16	1	WASHER, PLAIN 1/4	STEEL, CAD. PLATE
15	2	WASHER, PLAIN #10	BRASS
14	2	NUT, HEX #10-32 NF-2B	BRASS
13	2	GUARD, CIRCUIT BREAKER	STEEL, FS 1009-1020
12	24	HOOK, HANGER	CRES
11	20	CONNECTOR, ROUND, FEMALE, MOULDED	JOY MFG. CO. NO. X 8108-1, OR EQUIV.
10	18	CONNECTOR, ROUND, MALE, MOULDED	JOY MFG. CO. NO. X 8108-3, OR EQUIV.
9	2	SCREW, MACH. RD. H.D. #10-28 UNF.-2A X 3/4 LG.	STEEL, CAD. PLATE
8	1	CORD, 3 COND. #12 AWG, FLEX. STR., 255 FT LG	COPPER WIRE, RUBBER COVERED, TYPE 80, OR EQUIV.
7	9	LUG, SOLDERLESS, NO. 10 SCR SIZE	COPPER OR BRASS
6	1	CONNECTOR, TWO 8GR	GEN. ELECT. SUP. CORP. # SP 330 IV, OR EQUIV.
5	1	HANGER, CIRCUIT BREAKER	STEEL, FS-1009-1020
4	2	CONNECTOR, WATER TIGHT	PYLE NAT. CO., #DB-10, OR EQUIV.
3	1	SWITCH, CIRCUIT BREAKER, W/BOX	25 AMA 110 HAC. SQUARE-D, OR EQUIV.
2	REF	CIRCUIT BREAKER ASSY	
1	REF	WIRING HARNESS ASSEMBLY	PARA 3.6.1 MIL-F-40132
ITEM	REQD	DESCRIPTION	MATERIAL SPEC.

LIST OF MATERIAL

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ENCLOSURE (3)

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